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# Entomological News

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

OF THE

# ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

◇

## VOLUME I, 1890.

EDITOR:
HENRY SKINNER, M. D.

ADVISORY COMMITTEE:
GEO. H. HORN, M.D.
EZRA T. CRESSON.
CHARLES A. BLAKE.
PHILIP P. CALVERT.

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# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. JANUARY, 1890. No. 1.

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## ANNOUNCEMENT.

IT has for some time been apparent to Entomologists in this country that there was unoccupied room for a journal of Entomology devoted less to the dry details of descriptive and classificatory work and more to the news and gossip which is always of interest to entomological workers. The field of descriptive entomology is already well filled by journals published in Brooklyn, N. Y., and London, Ontario; that of economic entomology by a government publication at Washington, and the bibliographic department has received special attention at Cambridge, Mass. None of these journals allude systematically to the important work always in progress in Europe and elsewhere, nor do they by any means regularly notice such work appearing here from time to time. News of this sort is of great value to the student of Entomology even if he is near one of the large libraries; to those remote from these centres of information it can not fail to be of the utmost importance. A journal which will keep entomologists *en rapport* with what is being accomplished in serials and by monographs at home and abroad, and which will also give the items of interesting news concerning explorations and explorers, collections and collectors, will, it is believed, win its way into the good graces of the insect collecting fraternity. Such a journal is only possible where its conductors are in close communication with the literature of Entomology and the sister sciences. Philadelphia, the possessor of the public libraries of the Academy of Natural Sciences, the American Entomological Society and the American Philosophical Society and several private libraries rich in works on special branches of Entomology, is generally conceded to occupy a position in this field unrivaled in America.

With this in view the Entomological Section of the Academy of Natural Sciences of Philadelphia, with the co-operation and financial aid of the American Entomological Society, have decided to publish, beginning with this number, a journal to appear about the 1st of each month, July and August excepted, under the editorial and advisory direction set forth on the cover.

Besides such scientific papers as will naturally appear in a journal published under these auspices, there will be departments of "Notes and News," "Queries and Answers," "Exchange," "Doings of Societies," etc. Under the first it will be the object of its conductors to make ENTOMOLOGICAL NEWS deserve its name in the widest sense. Under the second, so far as may be possible, insects sent for determination will be named by members of the Section and the results announced therein. The department of "Exchange" will be free to all under reasonable restrictions. And, finally, it will be the aim to give a brief résumé of the proceedings of the various Entomological Societies throughout the world.

With liberal patronage and support from the Entomologists of America and elsewhere, it is intended that ENTOMOLOGICAL NEWS shall grow into an important factor in every entomologist's work. It will be enlarged, and its scope modified or increased, as its readers may seem to demand. This issue will give but a faint idea of what it is proposed shall be the scope of ENTOMOLOGICAL NEWS. Its conductors will be glad to receive from its readers, at any time, criticisms of its work and suggestions for its improvement.

Scientific papers, news-notes, reports of societies, etc., are needed from all sources to make this journal just what its name implies, a compend of entomological news.

EUGENE M. AARON.

# The Evolution of Metallic Colors in Insects.

BY T. D. A. COCKERELL.

Metallic coloring in insects cannot be a very recent development, for we have good evidence that it existed in later Eocene or Miocene times, a *Chrysis* having been discovered in the Florissant fossil-beds in Colorado. Nevertheless, probably no one would propose that the earliest insects, even of the orders now presenting metallic species in abundance were metallic. There seems to be a graduated series of colors, following in nearly direct sequence, and of these the metallic ones are by no means the first, nor do they occur predominatingly on those parts of the insect which we might suppose least specialized as regards colors.

For the present we may consider the Coleoptera and Hymenoptera alone, because in color these orders are specially related, and form a section apart from all other insects. The primitive color is probably *testaceous*, with variations to rufous, orange and yellow. The legs and under parts are often so colored where the upper parts are darker or metallic. Pale legs not unfrequently have dark joints, and this may be related to stimuli due to the motion of the parts. *Pimpla conquisitor* well illustrates the darkening about the joints, as well as the difference between the color of legs and body. Sometimes, however, these conditions are reversed, as in *Vipio coloradensis*, which is a reddish orange species with the legs mainly black.

From testaceous there is variation to dark brown of various shades—rufous-brown and black. It has been noticed how often phytophagous, and especially wood-eating beetles are brown, and there is good reason to suppose that tannin has influenced their color. Mr. Slater (Ent. Mo. Mag. 1887, p. 72) remarks on the presence of tannin in the tissues of phytophagous beetles, and M. Villon (Atheneum, 1887, p. 787) found tannin in corn-weevils. The non-metallic series of colors, then is something like this:

pale rufous, testaceous, orange or yellow,* through browns and rufous-browns to dark brown and black. The body is often darker than the legs, and the elytra of beetles are often darker than the thorax, though the reverse of this latter condition occurs in *Coccinella*, *Lacnæa*, *Dermestes*, etc.

Metallic colors seem to have their beginning at either end of the series, but it would seem that, whereas testaceous insects vary to metallic yellows and yellowish greens, black insects vary to blue. If black is highest in the non-metallic series, so we might expect that blue, to which it varies, would be higher than yellow or green in the metallic series, and this, I believe, is precisely the case. *Harpalus æneus* is sometimes dull and sometimes metallic green, or coppery. The green form, being the commonest, is regarded as the type, but no doubt the dull variety is the oldest, and the green the newest, or highest. The dull forms, then, are atavisms. The same sort of thing occurs in *Meligethes rufipes*, and a specimen was even found (Ent. Mo. Mag. 1885, p. 217) with one elytron dull reddish, and the other with a slight greenish metallic tinge. This case of partial or unilateral atavism is not unique. I have recorded a parallel case, though not relating to metallic colors, in *Dermestes fasciatus* (Entom. 1889, p. 119).

*Trirhabda convergens* has a variety which I call *virescens*, common at West Cliff, Col., in which the elytra, except a yellow costal or outer border, are rather dull metallic green. Here we see the tendency of the edges of the elytra to keep the original color, a very common thing with many beetles, and often a fixed specific character.

Dark species in the genus *Longitarsus* sometimes tend to become bronzed. *Crepidodera longula*, as described by Dr. Horn, is rufo-testaceous, with a greenish lustre. These are the beginnings of metallic colors at the lower end of the series. The paler the non-metallic form, the yellower its metallic variety, and here I am assuming that all metallic forms were once varieties.

In *Haltica* we have beautiful series of variations and changes from metallic golden to blue. From the distribution given by Dr. Horn (Trans. Am. Ent. Soc. 1889, p. 219, *et seq.*) it would appear that golden, green and bronzy forms are more prevalent in the mountains and to the north, while blue is a southern characteristic. This, however, is not an invariable rule. In *H. ignita* there is a regular geographical sequence southward from golden through green to blue. The cupreous and greenish varieties of *H. chalybea* mentioned by Dr. Horn I regard as atavisms.

---

* And the yellow varying and changing, as it does throughout organic nature, to scarlet, but this is beside our present purpose.

Here, though, it becomes necessary to define one's notion of *atavism*. Commonly, it is said to be reversion to the state of an ancient progenitor. Some confine it to the development of half-forgotten rudiments, but to me this seems an unwise restriction. To me there are two fundamentally different kinds of atavism :

(1) Due to the development of structures now obsolete.

(2) Due to arrest of development and consequent resemblance to a less-developed or differentiated ancestor.

The first class is due to *abnormal development*, the second to abnormal *arrest of development*—two very different things. Our atavistic green *Haltica chalybea* clearly belongs to the second division. The first division is exemplified in a horse that develops extra toes.

Mr. T. H. Hall gives me a list of his varieties of *Donacia sericea*. The females are coppery, brassy and green. The males are green, violet and purple. Here we see in the female the older type of coloration to what obtains in some butterflies and other insects.

At Chislehurst, in England, I collected two species of metallic *Chrysomelæ*. *C. gœttingensis*, which lived concealed at the roots of herbage, was dark blue. *C. hyperici*, on *Hypericum*, and more exposed, is green. Here seems protective adaptation to circumstances ; or perhaps we may say that *C. hyperici* would have developed in time to blue, but natural selection prevented it. *C. gœttingensis* has beautifully pink wings, but these need not be considered in the present connection.

Dr. Hamilton found a variety of *Calosoma wilcoxi*, varying from its normal green and golden to purple-black, with the margins of thorax and elytra purple-blue. Possibly this was a token of the future color of *C. wilcoxi*. In *Carabus* we have *C. nitens* with something the color of *Cal. wilcoxi*, and the coloring of Dr. Hamilton's variety is a permanent institution in *C. violaceus*. A. Bergé found he could actually manipulate these color changes in *Carabus* by chemical means, and produce certain "varieties" at will.

Metallic-blue grades into black. *Pæcilus mauritanicus* looks black, but shines a brilliant blue-green. *Perilampus cyaneus* is blue, but *P. hyalinus*, in the same genus, is black.

Perhaps a still higher development in the metallic series is crimson. This color appears prominently in some lovely species of the genus *Chrysis* in Europe, especially the common *C. ignita.* In America nearly all the species of *Chrysis* are blue or green, but *C. martia* has the abdomen crimson. This preponderance of green and blue in American *Chrysides* is in accordance with the not-rarely observed fact that where a genus is common to Europe and America, the American forms are the oldest. But in *Cantharis*, the common European species is green, while in America we see crimson appearing on the elytra; the thorax, as in *Chrysis*, remaining green.

WEST CLIFF, CUSTER CO., COL., Dec. 9, 1889.

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## Notes on Butterflies found at Cape May, N. J., with description of a new species of Pamphila.

BY HENRY SKINNER, M. D.

**Pamphila Aaroni** n. sp.—Antennæ, head, thorax and abdomen very dark brown, almost black. Primaries above tawny with blackish brown border about one-eighth inch in width. The base of the wing is shaded a darker color by the same dusky scales. The nerves of the primaries are not defined by the dark color as in *hobomok.* The tawny middle area of the wings is darker and more fiery than in the latter. The discal bar or dash is black and very distinct and well defined, although quite small in most of the specimens; running from this obliquely toward the body to the interior margin is a broken, very faint line. Secondaries are a practical reproduction of the primaries, the only difference being that the dark border encircles the entire wing, but is narrower on the anterior margin, and the neuration is well defined.

Underside.—Extending from the thorax into the wing for about one-eighth inch and covering only the lower half of the base is a sharply defined black spot, which has a pointed projection extending into the third median interspace. The middle area of the wing is tawny, but some shades lighter than the upperside. The border is about the same width as above along the lower half of the exterior margin, but widens considerably as it approaches the apex; this border and the immaculate secondaries are of a light cinnamon-brown color. There is a brownish black streak running along the interior margin of underside of primaries. The female is larger and the colors of a lighter shade and not as well defined as in the male. On the upperside it resembles *P. hobomok*, and beneath *P. delaware*, except in color. Largest specimen ♀ expands 1¼ inch. and the smallest ♂ 1 inch. Described from 7 ♂ ♂ 1 ♀. It is no more than proper that Mr. Aaron should have one of his pets called after him, thus the name emanated. The specimens were found in company with *P. panoquin*, feeding on the flowers of *Statice limonium* var. *Americanum*, which grows in the salt meadows, but was quite rare and exceedingly wild and difficult to capture, making off in a straight line when any movement was made near it. The seven specimens represented about ten days careful collecting.

## THE LIMITED RANGE OF SATYRUS ALOPE.

Without having given the subject any thought or study I had been under the impression that the greater number of species of butterflies had no fixed abode or dwelling-place, but were practically unrestricted in their range, going here, there and everywhere in search of food or pleasure. While on a tramp one day and only incidentally looking for insects, not having my net with me, I saw fluttering in and around a small clump of holly bushes a beautiful specimen of *Satyrus alope*, which evidently had only been a short time from the chrysalis; it alighted, and I endeavored to secure it by taking hold of the tips of the wings between the thumb and index finger, when it violently flapped them and left the tips as a souvenir. This spot and its neighborhood proved an excellent collecting-ground, and I subsequently visited it frequently, and each time saw the same *alope* in the same clump of bushes. I saw other specimens of the same species here which I learned to recognize from peculiarities in the way they were rubbed, etc., as most of the specimens at this time were badly flown. I made this species the subject of some study at the time, and came to the conclusion that it undergoes its transformations and lives its entire life in a very restricted area. A form with one ocellus is found at Cape May, which Mr. Edwards thinks is not *pegala*, but a variety of *alope*.

## EGG-LAYING OF TERIAS LISA.

The female *Terias lisa* deposits its eggs in a very systematic and uniform manner. It moves about in a fluttering way so characteristic of butterflies when ovipositing, and lights on the tip of the leaf *Cassia nictitans*, facing toward the stalk of the plant and walks up the leaf until the end of the abdomen is midway between the end of the leaf and its junction with the main stem and then deposits the egg on the upperside of the stem or mid-rib that runs between the leaflets. It moves with great care and precision, as though such nicety were very necessary. The egg is thus placed at what might be called the exact centre of the leaf. There seems undoubtedly to be design in this, as the eggs are exceedingly frail and delicate, and if deposited on the leaflets they would probably be injured or crushed when they close up tight at night. I did not notice whether the eggs were placed between the junctures of two sets of leaflets on either side, but I think such was the case. When the females are confined over the plant the eggs are scattered about indiscriminately either on the *Cassia*, or anything else near it. They were found ovipositing here in the last week of August, and at Westville, N. J., in September.

## THE FIRST STAGES OF PAMPHILA PANOQUIN.

August 22d, *Pamphila panoquin* was exceedingly abundant on the meadows flying about and feeding on the flowers of *Statice*. They were fine, bright specimens. This species does not seem to have as much of the jerky flight as most species of the genus, but flies generally in a straight line. It is readily caught when feeding on the blue flowers, which attract it greatly, but when in the net is exasperatingly restless, and usually manages to denude its thorax of hair. A female deposited a few eggs in the paper in which it was confined, not having been pinched hard enough to cause immediate death. One hatched August 27th, and the young larva was about one-eighth inch in length and was different from any Hesperid larva I had ever seen in being cream-white in color. Under the microscope it showed six or eight small point-like warts on each segment. The head was of a light coffee color darker toward the front. It entirely devoured the egg shell. The eggs were of the usual form in the genus and of a pale greenish white color. I tried to rear it on lawn grass, which it absolutely refused to eat, and thus suicided. The remaining eggs I sent to Mr. W. H. Edwards, but they failed to hatch. The female *panoquin* differs from the other sex in being larger, several shades darker in color, and in having the maculations on the superior wings much more sharply defined and brighter in color. There is a prominent light colored streak on the inferiors nearly one-quarter inch in length, which is either wanting or only indicated in the male.

A colony of full grown *Junonia cœnia* larvæ were found feeding on *Gerardia tenuifolium*, which, as far as I know, is a new food-plant for the species.

---

# NOTES ON COLEOPTERA.

BY GEO. H. HORN, M. D.

From the remarks of Mr. Fauvel (Revue Ent. 1889, p. 142) it is evident that two species of *Cryptohypnus* have been confounded under one name by many of the Coleopterists of Europe, notably by Dr. Candéze, whose work has been accepted as authority on the family ELATERIDÆ for many years. It is pardonable in students on this side of the Atlantic if they are found guilty of an error due to, or rather copied from, those who should be final authority on the species of the fauna around their own homes.

**C. pulchellus** Linn., *exiguus* Rand., *guttatulus* Mels.

The above line appears in Dr. Hamilton's paper on the Coleoptera of the sub-arctic regions common to both hemispheres.

From the remarks of Fauvel two species have been confounded under *pulchellus*, which have a great superficial similarity ; these are :

*C. pulchellus* Linn.—Thorax with posterior angles sinuate, divergent and acute at the apex, the striæ of the elytra obsolete at the tip.

*C. sabulicola* Boh.—Thorax with posterior angles arcuate, rather incurved, obtuse at apex, elytra deeply striate, the intervals subcostiform.

Any one who will read the descriptions of Randall and Melsheimer, which are remarkably good, will see that we have in our fauna *pulchellus* as described by Fauvel.

*C. quadripunctatus* Fab., does not occur in our fauna, although we have a representative species in *perplexus* Horn, which has a longer thorax and the humeral elytral spots only.

*C. dermestoides* Hbst. var. *quadriguttatus* Lap.—This species is now for the first time recorded in our fauna. It is a small species, thorax rugulose, especially in front; median line smooth, but linear. Elytra with four yellow spots, one on each humeral angle, the other on the middle line of the elytra near the apex.

Specimens are in my cabinet from Nova Scotia, Maryland (Lugger) and Washington, D. C. (Ulke).

The true *dermestoides* has no elytral spots, or very faint indications of them. Three such specimens are known to me from Nevada, northern California and Los Angeles. On the other hand three specimens from the State of Washington are intermediate in the fact of having a well-marked apical spot but no humeral.

*C. riparius* Fab., is said, by Candèze, to occur in our polar regions. He does not state his grounds for this and the species has not been recognized by us.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

◇

A ROYAL ENTOMOLOGIST.—Recently the Grand Duke Nicholas, of Russia, was elected a corresponding member of the Acad. Nat. Sci. of Philadelphia, in recognition of his services to Entomology. He is one of the few men of science of royal rank, and is editor and part writer of one of the finest works of recent years on Lepidoptera. The work was commenced in 1884, and at present consists of five handsome volumes, the last published recently. They are profusely illustrated in the most sumptuous manner by the best artists of Europe. He has sent out several collecting expeditions under a guard of Cossacks, which turned up many new and rare species. The work is entitled "Memoirs sur les Lepidopteres rediges," par N. M. Romanoff (Grand Duke Nicholas), of St. Petersbourg. The first article is "Les Lepidopteres de la Transcaucasie," by

N. M. Romanoff, and is continued in the succeeding volumes. He has a collection of Lepidoptera, and has corresponded and exchanged with Dr. Strecker, of Reading, who has received many fine specimens from him.

H. SKINNER.

PHILADELPHIA'S "WHITE PASHA."—Dr. W. L. Abbott, an ornithologist and entomologist, well known in Philadelphia, is making quite a reputation in East Central Africa as an explorer and naturalist. Before leaving this country he presented his fine collection of birds to the Philadelphia Academy. He also possessed a fine collection of Lepidoptera, mostly local species. Dr. Abbott is a life member of the Academy of Natural Sciences, a graduate of the Towne Scientific School and the Medical Department of the University of Pennsylvania, and member of the Royal College of Physicians and Surgeons of England. He collected birds in the far West in 1881, and birds and insects in Hayti in 1883, and presented the latter to the American Entomological Society; among these was a new species of *Anartia* and other rarities. He was with Herr Ehlers, who recently made the first successful ascent of Mt. Kilmanjaro, the highest mountain in Africa. Dr. Abbott did not reach the summit, but broke down at 17,000 feet with heart dilatation, as he was convalescing from the African fever. More birds have been collected by him than by any one who has visited the Kilmanjaro region (550 species). At last accounts Dr. Abbott was preparing a large expedition into Masai land. Stevens, the round-the-world bicyclist, alludes to him quite frequently in his letters to the *New York World*. He describes the natives as singing his praises as follows :

"Our Wanyamwezi, marching together in the same regular order as yesterday, struck up a vociferous and truly African refrain, while the rest of the caravan sung the chorus. No matter how hot the day or how tired his limbs, the porter seems always ready to split his throat in singing and shouting. For this or for dancing he seldom gets too tired. The Wanyamwezi are noted shouters. They commenced a song in praise of the white man, and many joined in heartily.

"Great is the mzunger! Woh! woh!" sung the melodists from the Land of the Moon.

"Woh! woh! woh! the Mzu-u-gu-u-u! woh!" chorused the caravan.

"The Mzungu is great! woh!"

"Woh! woh! woh! the Mzu-u-g-u-u! woh!"

"Great is the Merikain! (Dr. Abbott, who is widely known by that proud title among the natives of East Central Africa) woh!"

"Woh! woh! woh! the Merikain, woh!"

"Our food is rice and fish! woh!"

"Woh! woh! woh! rice and fish!"

"Woh! our food is rice and fish!"

"Great is the Mzungu! woh!"

"Woh! woh! woh! the Mzungu woh!"

"He gives us rupees! rupees!"

"Woh! woh! woh! he gives us rupees! rupees! woh!"—H. SKINNER.

PHYTONOMUS PUNCTATUS FAB.—The appearance of this weevil in this vicinity for the first time and in numbers, is one of the remarkable incidents in Coleoptera occurring during the year just ended. The first specimens were taken about the first week in May and the last the early part of November. At irregular intervals it appeared very abundantly, and but few days passed without at least one or two specimens being observed. It is singular that, when this insect makes its appearance in any locality, it is always in numbers. Mr. Reinecke, of Buffalo, in August, 1884, recorded an invasion of this species at that place, in the *Buffalo Freie Presse*, which was reprinted in the "Brooklyn Bulletin" of September, 1884.

CHARLES LIEBECK.

A COCOANUT PEST.—The United States Consul at Santiago de Cuba has made a report to the Secretary of State in regard to a mysterious disease prevailing in that country which at one time threatened to annihilate all the plantations producing cocoanuts for market and export. Small shipments of cocoanuts are constantly leaving Santiago for the United States, and the Consul says he has sought to discover the origin of the disease which has affected them. Opinions of scientists differ as to the cause and nature of the disease. The Consul says that it has been at last definitely ascertained that the destroyer of the cocoanut tree is an insect of diminutive size, barely visible to the naked eye, and probably a Coccid. Prof. Gundlach, of Havana, recommends that all cocoanuts received in the United States be dipped into boiling water upon arrival, and that the bags they are shipped in be destroyed. E. M. AARON.

EREBIA EPIPSODEA var. *Sine-ocellata* described in Can. Ent. Dec., '89, p. 239, by Dr. Henry Skinner, the author informs us, is probably a synonym of *Epipsodea* var. *Bruçei* described in a few words by Mr. Elwes, Trans. Ent. Soc., London, June, 1889, p. 326. The latter description is as follows: "minor absque ocellis fascia rufa fere obsoleta," habitat Summit County, Colorado, 12,000 feet altitude. It is but justice to Dr. Skinner to state that his description was in the hands of the editor of the "Canadian Entomologist" at least six weeks before Mr. Elwes' description was received at the libraries in Philadelphia. E. M. AARON.

HOME-MADE CORK.—Mr. F. M. Jones, of Wilmington, Del., describes a very good lining for insect boxes as follows: "I made a rough wooden press and procured about a barrel of the fine cork which white grapes are packed in, mixed it with weak glue and pressed it into sheets between white paper. The sheets when pressed must be about three-eighths of an inch thick to turn out properly. It answers very well and costs almost nothing." H. SKINNER.

RARE BEETLES ON THE NEW JERSEY COAST.—Among many good things taken on Brigantine Beach, N. J., just after the September storm, by which the whole island, except a few of the coast sandhills, was submerged, may be specially noticed:

*Cafius sericeus* Holme, two ♀ examples. This fixes an American locality for and decides in favor of the successful colonization of this European species. It appears slender and delicate compared with the abundant *vistriotus*.

*Cryptobium pusillum* Lec., two examples, ♂ and ♀, .25 inch. long. The only specimen seen by Dr. Horn, when preparing his *Cryptobium* paper, was the type in the LeConte collection, a ♂ from the sea-shore of Long Island. N. Y. The last ventral segment of the ♂ has a parallel notch from apex to base, and a contiguous depression on the apex of the preceding, as if nature had intended to continue the slit; the last ventral of the ♀ is rounded.

*Cryptobium lugubre* Lec., three examples, unfortunately ♀. Having been described from Florida, it is mentioned here to record the locality.

*Quedius brunneus* Mann., and *Actobius nanus* Horn, were taken in some abundance. The Coleoptera were for a time very much concentrated, taking refuge under the trash swept up around the sandhills. The New Jersey coast is rich in small Coleoptera, apparently neglected by neighboring collectors, or at least unrecorded. JOHN HAMILTON.

## Entomological Literature.

BULLETINS OF THE ILLINOIS STATE LABORATORY OF NATURAL HISTORY, Vol. III.

Article V.—*A Descriptive Catalogue of the Phalangiinæ of Illinois* by Clarence M. Weed, M. Sc. In a pamphlet of 20 pp. the author tabulates the genera *Liobunum*, *Oligolophus* and *Phalangium*, describing in them eight, one, and one species respectively. Three figures are given in the text. *L. elegans* and *L. politus* are described as new.

Article VI.—*A partial Bibliography of the Phalangiinæ of N. America*, by the same author, enumerates the general articles and follows with a reference list of the species. Students of this little-known group, so commonly called "daddy-long-legs," will find these papers invaluable guides.
E. M. A.

MASSACHUSETTS AGRICULTURAL COLLEGE. Bulletin No. 5, July, 1889. *Household Pests*, by Charles H. Fernald, 10 pp. 6 wood-cuts [Dec., 1889.] Carpet beetles, clothes moths, ants and bacon beetles are treated of and their habits and remedies described in a way that renders the author's meaning clear to any reader.—E. M. A.

AGRICULTURAL EXPERIMENT STATION OF MINNESOTA. Bulletin No. 8, July, 1889. *The Rocky Mountain Locusts in Otter Tail County, Minn.*, in 1889. [Otto Lugger, Ph. D.] 20 pp., 9 cuts, 2 plates, 53 figures [Dec., 1889.] A very full inquiry into the cause, effects and prevention of this visitation for the past season.—E. M. A.

CANADIAN ENTOMOLOGIST, Vol. XXI, No. 12, Dec. [14,] 1889, "mailed December 7th," contains the following: "Preparatory stages of *Leptarctia Californiæ* Walker, with notes on the genus," by G. H. French (continued from p. 213, November). Eleven excellent wood-cuts accompany the text, illustrative of the varieties *Strechii*, *Boisduvalii*, *Dimidiata*, *Albifascia*, *Occidentalis*, *Latifasciata*, *Fulvofasciata*, *Californiæ*, *Wrightii*, *Decia* and *Lena*. "The Noctuidæ of North America and Europe compared." Fourth paper by A. R. Grote, A. M. The tribes *Arzamini*, *Nonagriini*, *Scolecampini* and *Caradrini* are treated of. "The North American Callimorphas," by H. H. Lyman. A reply to Prof. Smith, Mr. Grote, et al. "On the Predatory Habits of *Chætopsis ænea* (Wied.)," by Rev. T. W. Fyles. "Preparatory stages of *Pyrameis carye* Hübner," by H. G. Dyar. "Butterflies at Qu'Appelle, Assa," by Henry Skinner, M. D. *Erebia Sine-ocellata* nov. var. of *Epipsodea* is described. "A Rare Moth," [*Erebus zenobia*,] by A. H. Kilman. Records its capture in Ontario.—E. M. A.

A REVISION OF THE SUBFAMILY LIBELLULINÆ WITH DESCRIPTIONS OF NEW GENERA AND SPECIES by W. F. Kirby (Trans. Zool. Soc. London, xii, pp. 249–348, Plates LI—LVII, August, 1889), is undoubtedly the most important work on this group that has appeared since the publication of Dr. F. Brauer's "Verzeichniss der bis jetzt bekannten Neuropteren im Sinne Linné's (Verhdl. zool.-bot. Gesell. Wien, xviii, pp. 359–416, 711–742), in 1868.

This revision is based on the material in the British Museum. The subfamily is divided into 88 genera, 40 of which are now proposed for the first time. In characterizing genera, Mr. Kirby has "selected the neuration as on the whole the most satisfactory guide." A general description of the characters made use of, and an analytical table of the genera precede the detailed descriptions of the genera. Fifty-three new species are described, mostly from South America. The plates are excellent and of great service to the text. A number of changes in the names of nerves of the wings are introduced.

It is to be regretted that Mr. Kirby, in common with other British entomologists of late years, has retained Newman's names–*Sympetrum*, *Orthetrum* and *Lepletrum*. Both Dr. Hagen and Baron de Selys-Longchamps are now agreed that it is best to reject these terms.

As a student of the ODONATA, the writer could wish that a complete list of the species under each genus had been included in this work, although this would have called for much additional labor. Perhaps Mr. Kirby will yet favor us with such a list.--P. P. CALVERT.

THE ANNALS AND MAGAZINE OF NATURAL HISTORY December, 1889. This number contains the following articles of interest to entomologists:

"Notes made during the summer of 1887 on the effect of offering various Insects, Larvæ and Pupæ to Birds," by Arthur G. Butler, F. L. S., etc. After replying to certain criticisms made by Mr. Poulton, in a former number of the "Magazine of Natural History," the author gives the result of very many experiments, made from August 16th to October 5th, principally with caterpillars that were offered to the Missel-thrush, Nightingale, Starling, Chaffinch, Rose-finch, Siskin, Waxbill, Skylark, Indigo-finch, Sedge-warbler, Blackbird, Bulbul, Wryneck, Canary, Weaver-bird, and several other birds. As a summary of these experiments he concludes: "It is noteworthy, from an examination of the above records that no insect in any stage, excepting the red-tailed bumble-bee (which, by the way, I only offered to the Missel-thrush) was rejected by all my birds; those insects which were refused by certain species were eagerly devoured by others, so that it was impossible to conclude that any of them enjoyed perfect immunity from destruction. In the second place, so far from my birds learning by experience to reject with scorn that which they had proved to be unpalatable, I found that in some instances they seemed to acquire a taste for larvæ previously refused. Birds are very intelligent, but their memories are ridiculously short." "A new species of *Rhax*," [*Rhax semiflava*, from the Punjab] by R. I. Pocock. "A new species of *Glomeris* from Borneo," [*Glomeris concolor*] by R. I. Pocock. "On the Parasitic Castration of the TYPHLOCYBÆ by a Hymenopterous Larva (*Aphelopus melaleucus* Dalm.) and by a Dipterous Larva (*Atelenevra spuria* Meig.)," by M. A. Giard [A translation from *Comptes Rendus*, Nov. 4, 1889, p. 708.]

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, December, 1889.--This number contains the following: "*Trifurcula palllidella* in the Isle of Purbeck," by Eustace R. Bankes. "Remarks on Mr. James Edwards' list of Norfolk Hemiptera," by Edward Saunders. "Second Supplement to Annotated List of British ANTHOMYIIDÆ," by R. H. Meade [*Hydrotecæ-Pegomyia.*] "Synopsis of the British Orthoptera," by Eland Shaw [*Pachytylus-Tettix.*] "The usual amount of collecting notes of local interest are given space, and notes on "breeding *Deilephila galii*;" the woodpecker, "a destroyer of larvæ of *Tenzera Æsculi;*" the foods of *Boarmia rhomboidaria*, *Œcophora stipella* and *Lygus viscicola*; and the bite of *Nabis limbatus*. Reports of the proceedings of the Birmingham Entomological Society, the South London Ent. and N. H. Soc., and the Ent. Soc. of London, are followed by 27 pp. of table of contents and index.

E. M. A.

JOURNAL OF THE ASIATIC SOCIETY OF BENGAL, Vol. LVIII, Part II, Nos. I and II [Issued May-September, 1889;" received Philadelphia, Dec. 21, 1889] contains "A new species and genus of COCCIDÆ," [*Pseudopulvinaria Sikkimensis*] by E. T. Atkinson; Plate I, 14 figures. "Notes on Indian Rhyncota; Heteroptera, No. 5," by E. T. Atkinson; 149 species are described, one species, *Microdeuterus Dallasi*, being new. "Notes on Assam Butterflies," by Wm. Doherty; Plate X, colored figures of 8 species; 5 new. A classification of *Euthalia* and allies is proposed, based on the costal vein of the forewing. This paper contains much of interest to the student of this suborder. "Definitions of three new Homoptera," [Local species of the genus *Idiocerus*] by E. T. Atkinson.—E. M. A.

# Exchanges.

**[Entomologists are invited to make free use of this page for the purpose of bringing their duplicates and desiderata before the insect-collecting world. Cards of four lines, with four changes per year, will be allowed without charge. Beyond that, insertions will be charged at regular advertising rates.]**

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North American botanical specimens offered in exchange for butterflies and moths—I. C. Martindale, Camden, N. J.

The LEPIDOPTERA of the world offered in exchange for North American MACROLEPIDOPTERA.—Henry Skinner, 716 North 20th St., Philada., Pa.

LEPIDOPTERA. Cocoons of hybrids, ex *Ceanothi* et *Cecropia;* also *Gloveri* et *Cecropia,* besides set specimens of North American species. Lists exchanged.—Emily L. Morton, Newburgh, N. Y.—New Windsor Delivery.

HESPERIDÆ of the world desired in exchange for the same and other rare butterflies. Good cash prices for rare species. Correspondence solicited.—E. M. Aaron, Academy Natural Sciences, Philadelphia, Pa.

AMERICAN LEPIDOPTERA, especially from West and North desired for purchase or exchange.—H. J. Elwes, Preston, Cirencester, England.

HEMIPTERA desired in exchange, especially in HOMOPTERA, either named or unnamed. Correspondence solicited.—E. P. Van Duzee, Grosvenor Library, New York.

A limited number of *Neonympha Mitchellii* French, n. sp., for exchange. Send lists to Irving N. Mitchell, Fond du Lac, Wisconsin.

PAMPHILA AND CATOCALA. Good value in cash or exchange for perfect specimens.—Philip Laurent, 1306 Chestnut St., Philadelphia, Pa.

Dragonflies (*Cdonata*) wanted from all parts of the world. State what is desired in return.—Ph. P. Calvert, Entom. Section, Acad. Nat. Sci., 19th and Race Sts., Philadelphia, Pa.

The undersigned would be pleased to hear from any one interested in the collection and study of Coleoptera of North America, either to correspond or exchange specimens. Will collect all orders in this vicinity and exchange for Coleoptera of other localities.—Charles Liebeck, Entomological Section Acad. Nat. Sciences, Philadelphia, Pa.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. FEBRUARY, 1890. No. 2.

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## May Moths in Northern New Hampshire.

BY ANNIE TRUMBULL SLOSSON.

Few entomologists seem to know much of the early spring in Northern New England and its opportunities for collecting. For the last two or three years I have gone to Franconia, N. H:, on or before the middle of May. In an ordinary season the snow at that date still lies in the woods, and the mountains often look quite white. But there are plenty of moths.

I have found, on May 15th, *Corycia vestaliata* Guen. and *C. semiclarata* Walk. flying in such numbers over the fields and on the edges of woods that they looked like white flower petals fluttering in the breeze. With these, and as early, fly the pretty species of *Lobophora*, *L. vernata* Pack. and *L. geminata* Pack. About the same date *Lozogramma defluata* Walk. and *L. detersata* Guen. start up before you as you walk in meadow or open woods to fly rapidly a few feet and drop again suddenly to the ground. *L. lactispargata* Walk, is generally a little later. On 18th or 20th comes the early brood of *Selenia kentaria* G. & R. No one who has not seen these early specimens at this season can know anything of the real beauty of this species. These first comers are larger and infinitely deeper and richer in tint than the later ones, and there is a soft, tender bloom upon the surface of the wings which is as evanescent as lovely, and is quite lost in drying. Before the 20th *Eufidonia notataria* Walk., *Fidonia truncataria* Walk. and *Ematurga faxonii* Minot, are plentiful.

All these are day flyers, of course. The nights at this season are still very cold, and often frosty, but it is marvellous to see how many noctuids are moving about and are attracted to sugar and to light. Two years ago, between May 16th and 20th, *Homoptera edusa* Drury, was in great abundance, flocking at night to our sugar-stations and also to our lanterns on the piazza. We have often taken more than a hundred of this species with its two varieties, *lunata* and *saundersii*, in an evening. With them came also *H. unilineata* Gr., *H. woodsii* Gr., *H. benesignata* Harv., *Zale horrida* Hüb., and the three forms of *Ypsia undularis* Drury. *Tæniocampa incerta* Hüb. is one of these earliest moths and very abundant. By the end of the month some of the *Bombycidæ* make their appearance; the Spilosomas—*virginica* and *prima*—*Halisidota maculata* Harr., *H. tessellata* A. and S., *P. isabella* A. and S., *L. acræa* Drury, *Arctia virguncula* Kirby; *Notodonta stragula* Gr.; *N. basistrieus* Walk. *Lophopteryx elegans* Strecker; *Nerice bidentata* Walk. and many others. And you must remember that this is not in the May of Pennsylvania, or even that of southern New England, but in the tardy cold spring of the northern hill country. There the snow often lies upon the ground until June; the streams are icy cold, and all vegetation exceedingly backward. Upon what do these early subalpine moths feed? There are almost no blossoms at the season of which I speak. From under the snow the *epigæa* lifts a few pink buds, and in a favorable, sunny May, *viola rotundifolia*, *v. selkirkii* and a few—a very few—other hardy little plants open tiny blossoms.

I must not forget to say that it was in the last week of May, in a very backward season, while snow lay in heaps and drifts, in sheltered, shady spots, that I took at light my fine specimen of *Phragmatobia assimilans* Walk. This beautiful insect known only for many years by the worm and damaged types in the British Museum owes, doubtless, its rediscovery by me to my early visit in that backward season to the New Hampshire hills.

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## Random Notes on Lepidoptera.

BY HENRY SKINNER, M. D.

*Determination of Sex of the Cocoons of Cecropia.*—One winter some time ago I collected a large number of *Platysamia cecropia* cocoons and noticed quite a difference in their superficial appearance, and I determined to see, if I could, what it meant. I had suspected from some previous observations that the two kinds represented the different sexes. I divided the cocoons accordingly, putting them in separate boxes, and found, subsequently, that the cocoons in one box produced males and the other females. I separated them by the following characters: the male cocoon is much more compact, lighter in color, and not nearly so baggy as the female and much longer in proportion to its width. A typical male cocoon is three and three-quarters inches in length and one and one-eighth in width, while the female cocoon is but three and one-eighth inches in length by two inches in width. The male cocoons are nearly always found high on the stalks (elder) and the females close to the ground hidden by long grass and dead leaves or other matted material where the elder stalk leaves the ground. The difference in the construction of the two cocoons is very striking, the wrinkled, baggy character of the female ones is noticed at once. There may be some exception, but I think by taking the sum of the characters the sexes may be picked out at once without any difficulty, especially in the cocoons found on elder bushes. The above facts are also true of the other species in the genus *Platysamia*, but in a lesser degree. I have separated the sexes of *ceanothi* in the same way.

### A UNIQUE COLLECTING-FIELD.

The Eastern Penitentiary is situated at 22d and Fairmount Avenue, Philadelphia, in the heart of the city, and is surrounded by a stone wall about 42 feet high. The corridors run from a common centre like the spokes of a wheel, thus leaving some ground between them. Most of the cells have a small yard attached in which the prisoner is allowed a few hours each day for exercise. Some time ago while on a professional visit to some of the inmates I was mortified to find a lepidopterist, although interested in his captures, which were all made in the yard attached to his cell. The cell yard was enclosed by stone walls 14 by 17 feet and 11½ in height. In this small space he had caught during the past summer eighteen species, as follows: *Papilio asterias, turnus, glaucus, ajax; Pieris rapæ; Colias philodice; Danais archippus; Grapta interrogationis; Vanessa antiopa, atalanta; Ancyloxypha numitor; Eudamus tityrus; Philampelus satellitia; Sphinx celeus; Hemaris thisbe; Catocala obscura, ilia; Cicada* sp.

*P. ajax* is a great rarity here. I have never seen but one in the city limits, and *Catocala obscura* is also rare. Most of the species were represented by a number of specimens.

### AN ERROR CORRECTED.

Mr. Wm. Beutenmueller in his article on the preparatory stages of *Callosamia angulifera*, Ent. Amer. Vol. V, No. 11, p. 200, says "the cocoon can only be separated from that of *Promethia* by its larger size." The differences in the cocoons and the habits of the larvæ of the two species in my mind are the most striking proofs of the distinctness of the species. The full grown *Promethia* caterpillar takes great care to securely fasten its cocoon to the twigs of the tree and hangs by a thread of tightly-woven silk, which has been spun over the stem of a leaf and the dried leaf itself from the outer covering of the cocoon. The *angulifera* caterpillar either spins its cocoon in the leaf and when the leaf drops in the fall the cocoon falls to the ground in it, or crawls down the trunk of the tree and spins its cocoon in the grass, or fastens it to a dead stick under the tree. The *angulifera* cocoon is oblong, being one inch and a half in length by five-eights of an inch in width, and never has the silken prolongation as in *Promethia* (see "Psyche," Vol. V, p. 261), and is not obscured so much by the curled leaves, and has a more marked appearance.

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## Siphonophora or Nectarophora?

BY CLARENCE M. WEED.

The fact that the aphidid genus *Siphonophora* has recently been replaced by *Nectarophora*, does not seem to have received as much attention from entomologists as it deserves, and ENTOMOLOGICAL NEWS may perhaps be utilized to present a brief statement of the case. The change was made by Prof. O. W. Oestlund in his "Synopsis of the APHIDIDÆ of Minnesota (Bulletin No. 4 of the Geological and Natural History Survey of Minnesota, p. 78)," where in using *Nectarophora* he says:

"It is with some reluctance that I propose to replace a name that has already become so familiar and extensively used as that of *Siphonophora*. But *Siphonophora* as a generic term was already appropriated for the *Myriapoda* before Koch made use of it in the APHIDIDÆ; and it is also used to denote an order of the oceanic HYDROZOA, and should, therefore, according to practice, be replaced by one not already occupied."

Prof. Forbes informs me that Marschall's "Nomenclator" gives the date of the use of *Siphonophora* by Brandt for a genus of MYRIAPODA at 1886, and that of Koch for HEMIPTERA at 1855.

It seems to me that in questions of nomenclature entomologists at present cannot do better than follow the code of the American Ornithologist's Union, in accordance with canon xxxiii, of which the use of *Nectarophora* would be justified. This canon reads as follows:

"A generic name is to be changed which has been previously used for some other genus in the same kingdom; a specific or subspecific name is to be changed when it has been applied to some other species of the same genus, or used previously in combination with the same generic term."

———o———

## **Notes on Smerinthus Astylus** Drury.

BY FRANK M. JONES.

As but little is known of the life-history of this insect, the following notes may be of interest; unfortunately, I could not obtain a full description of the larva through all its changes:

June 16, 1889.—Found ♂ and ♀ on a twig of High-bush Huckleberry. Here and there on all the Huckleberry bushes hung a few dry leaves; the leaves, when dead, turn cinnamon-brown, and the two moths, as they sat motionless on the twig, so closely resembled one of these clusters of dry leaves, both in color and outline, that I did not recognize them as living insects for some seconds after seeing them.

June 16 to 19.—♀ laid 151 smooth, glossy, pale greenish yellow eggs, somewhat flattened, 2 mm. greatest diameter.

June 23.—Some of the eggs changed to dirty white, and the young larvæ could be seen within.

June 24.—Eggs commenced to hatch; young larva pale greenish white, 6 to 7 mm. in length; head and thoracic segments large; caudal horn 1.5 mm. in length, reddish brown, darker at base and tip; two spines at tip, making it appear pronged; horn usually straight, or nearly so, but in some cases much curved; in this moult it points backward.

July 28.—Larva full grown; length 38 mm.; green, with yellow granulations; seven yellow, oblique, lateral stripes, the last reaching base of caudal horn; an indistinct, yellow, longitudinal, lateral line to fifth segment, and continued faintly; a variable number of red dorsal spots or blotches, two on a segment; some have but two small red spots on the third segment, and on others red is the predominating color of the dorsal region; caudal horn straight, pale green; two thorns at tip; points forward; several days before pupating the green of the dorsal region fades to a dull yellow.

August 11.—First larva pupated; although provided with a plentiful supply of light, moist earth, none of the larvæ attempted to enter the ground, but pupated upon the bare soil. If this is their habit in nature, it may in part account for the rarity of this insect, but I have noticed the same thing with other and commoner species when confined in breeding-cages, and its rarity is probably due to some other cause.

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## Notes on a few Virginian Dragonflies.

BY PHILIP P. CALVERT.

Some months ago Mr. Wm. D. Richardson, of Fredericksburg, Va., sent to me, for identification, a few dragonflies which he had taken in Spottsylvania County in that State. These specimens may interest some readers as adding new data for geographical distribution. Excepting *Æ. heros*, none of these species have been recorded from Virginia before, although *P. trimaculata* was known to inhabit the United States everywhere east of the Rocky Mountains. The notes which Mr. Richardson sent with the specimens are enclosed in quotation marks.

1. *Lestes forcipata* Ramb. (Selys, 1862) ♂ "July 3, 1889, near a pond."

This species is the *hamata* of Dr. Hagen's Synopsis of 1861.

2. *Anomalagrion hastatum* Say, ♀ "July 12, 1889, near a pond."

3. *Enallagma aspersum* Hag., ♂ "July 12, 1889, near a pond."

4. *Æschna heros* Fabr., ♂ "June, 1889; caught while flying near a stable, about a thousand feet from a pond, late in the evening."

5. *Celithemis elisa* Hag., ♂ "July 3, 1889, near a pond."

6. *Plathemis trimaculata* De Geer, ♂ "June 18, 1889, near the borders of a small pond about one-quarter of a mile from Fredericksburg."

7. *Libellula quadrupla* Say, ♀ "1888, border of a small pond near Frederickburg."

The most southern locality known to me for this species is Greenville, S. C., from which I possess a female taken by my friend, Mr. Lawrence O. Patterson.

8. *Diplax vicina* Hag., ♀ "June 18, 1888, flying over a pond."

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## NORTH AMERICAN HESPERIDÆ.

BY EUGENE M. AARON.

### No. 1.—ERYCIDES URANIA and EUDAMUS HESUS.

It is the purpose, in this series of short papers, to give descriptions of new or little-known species of North American HESPERIDÆ, with notes that will be calculated to aid students in the study of this neglected Family. There are a few species of HESPERIDÆ which have never been described, the identification of which depend on illustrations only to be found in rare and costly works. Others are inadequately described or, in the opinion of the writer, confounded with older species, and still others are as yet undescribed. Where it seems to be desirable to elucidate the text, plain drawings will be furnished.

**Erycides Urania,** West. [Plate I, fig. 1.]*

West.-Doub.-Hew., Gen. Di. Lep., p. 510, No. 7, pl. 79, fig. 1 (1852).

Though figured, in 1852, in the superb work cited above, this striking species has never been described in the publications of its native land nor abroad. As the "Genera of Diurnal Lepidoptera" is an extremely rare work—it is doubtful if more than fifteen copies are to be found in the United States—I have thought it well to describe and figure it at this time, so that hereafter it may be easier for the American student of the HESPERIDÆ to identify the species as it turns up in collections.

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* Plate I will appear in a future number of NEWS.

The only textual reference to this species in the "Gen. Di. Lep." is in a list of the species of the genus; the student is left to the very accurate figure on plate 79 for the determination, and there, very unwisely as it seems, only the upper side is figured.

The description which follows is made from the figure by Mr. Hewitson, and from a fair series of specimens from Texas and Mexico:

Expanse 2 to 2⅜ inches. Ground color above black on both wings; banded and spotted with bright green or blue. On the primaries this banding in most examples is caused by the fact that nearly the whole surface is covered with a dense coat of scales of bright green, which, being separated by the black bordered nervures, take on the form of longitudinal bands; in a few specimens, however, the apical area is but slightly sprinkled with green and the whole outer half of the wing appears black or nearly so. A group of translucent sub-apical spots consist of three constricted points along the costal margin, one larger below the outer of the three, and a much larger quadrate spot centrally below the four. Two translucent bands follow these spots internally, the first bifid, short, hardly more than an elongated spot, the inner one crossing the median area much longer and made trifid by two nervures. The color of the markings on the secondaries is much brighter, and towards the anal angle of a deep azure-blue tint in some examples. From the base three streaks diverge towards and stop abruptly on the median area, the upper of these is shorter than the others to make room for the bifurcate series of spots on the outer area of the wing. These spots—four in the inner limb and seven in the outer are placed in the form of a written letter *y*. On some examples there is a faint indication of another streak, longer than the three others running parallel to the abdominal margin.

Beneath, color and markings a reproduction of the upper surface, save that while the black is not so dense on the primaries, it is deeper and more velvety on the secondaries. The green atoms on the primaries are fewer; on the secondaries they are brighter, and the bands run all the way to the costal edge.

Thorax above black, with tufts of green hairs, beneath marked to match the secondaries. Abdomen black, with green hairs and annulations of the same color. Head and palpi above green spotted, white beneath. Antennæ black, dark cinereous at tip. Emarginations, above and below, notched, white.

*Habitat.*—Mexican boundary of Texas; Mexico; Central Am.

**Eudamus Hesus,** West. [Plate I, fig. 2.]

*Goniloba Hesus*, West.-Doub.-Hew. Gen. Di. Lep. p. 573, No. 40, pl. 78, fig. 5 (1852).

As in *Erycides Urania*, this species has never been described, but has always been accepted on the strength of the excellent figure of the upper surface, the lower surface not having been represented. The description which follows is made up from this figure, and a small suite of specimens; the species is rather rare in collections.

Expanse 2¼ to 2⅜ inches. Primaries much produced apically. Ground color rich rufous brown, shaded with deep umber on outer and abdominal margins, and approaching black-brown on costal margin of secondaries. Primaries with three sub-apical honey-yellow spots, the upper very minute; an irregular discal patch of the same color translucent, resembling a three-leaf clover in shape and composed of three unequal outwardly-notched spots, extends from the costal area well towards the posterior angle. This patch is faintly margined by black; at the juncture of the three spots there is a triangular spot of the ground color. On the costal margin a deepening of the scales and a deep incision running therein for about one-third the length of the wing presents the appearance of an aborted costal fold; sometimes this area is of a lavender-gray color. On lower margin towards base there are two small black spots and two smaller and less distinct just below the outer angle of the discal patch; these seem to be a disconnected continuation of a band of two or three still fainter on apical area. Secondaries have a small round black spot on disc and a row of five or six of the same color, and of varying size, parallel to the outer margin.

Beneath, the ground color is much duller in tone and more clouded. Honey-yellow spots, of the primaries above, reproduced; black points wanting. Secondaries without the broad area of black-brown on costal margin; the spots of the upper side are replaced with spots of a lighter color than the ground encircled with brown fuscous. The row of spots parallel to th outer margin is made to continue in its sub-marginal course b the addition of two spots placed parallel to the costal margin Beneath the discal spot and towards the abdominal margin ther is another somewhat smaller.

Body and thorax above and below concolorous with the wings head above the same, below much brighter. Antennæ annulate with black and the general color, brighter at base of tip, the black, and finally ending in a long tapering tip of the genera color.

*Habitat.*—Mexican boundary of Texas; Mexico; Central Am. Brazil (?). The locality was unknown when the insect was figure by Westwood.

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# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive item of news, likely to interest its readers, from any source. The author's name will be give in each case for the information of cataloguers and bibliographers.]**

◆

ABCANTHIA PAPISTRILLA IN NESTS OF THE BARN SWALLOW.—Whil workmen were nailing some brackets beneath the eaves of the colleg barn in the latter part of last August preparatory to putting up new eave troughs, they complained of receiving a shower of bed-bugs wheneve they pounded on the barn. The fact was reported to me and I immediately went, bottle in hand, to get a supply of the bugs.

A large flock of swallows had lived about the barn all summer an reared their young and had recently deserted the place. The eaves wer completely lined with their mud nests between the ends of the rafters Upon examining these nests I found them to be literally alive with crawlin vermin somewhat resembling bed-bugs, but much smaller, more hairy, an having a grayish pilose appearance instead of the naked brick-red appearance of the article that I had always seen. The outside of the nests wer in many places gray in color from the accumulation of their white egg shells. The largest of the bugs found in the nests measured but 9-64 o an inch in length, while full grown specimens of *A. lectularia* in my collection measure fully ¼ of an inch. I am indebted to Mr. Ashmead, o the Division of Entomology at Washington, for the identification of th species. Mr. Ashmead tells me that he does not think that this specie has ever before been reported in this country. It is a common species i

Europe on the swallow and the bat. Is it not very possible that in most cases, and perhaps in all cases, where bed-bugs have been reported in swallow's nests in this country that this was the species present, and not *A. lectularia?*
C. P. GILLETTE.

West Cliff, Custer Co., Col., Dec. 16, 1889.

The Editor ENTOMOLOGICAL NEWS,

DEAR SIR:—I received your preliminary circular, or prospectus, to-day, and am glad to hear of the new journal. Conducted on the lines set forth, and by the editor and committee announced, it cannot fail to be highly useful. It will bring entomologists in closer touch and to more harmonious feeling than has yet been seen on this side of the water. * * *

It has occurred to me that ENTOMOLOGICAL NEWS might fulfil a very useful function by collecting facts and opinions regarding the various questions which have been or are under debate in entomological circles. Thus, you might announce in successive numbers of the journal that facts and opinions were required concerning such questions as:

1. Does moisture cause melanism, and if so, why?
2. Ought varieties to be named, and if so, to what extent?
3. Should the term "form" be used to indicate slight varieties?
4. In symmetrical insects does one side tend to vary more than the other in an average of numerous examples?

And so on.

Then a "question editor" might be appointed (or a committee) to sift and arrange the resulting correspondence, and finally draw up a report showing the trend of opinion and the weightier facts on either side. Don't you think that would be useful?

You might also have a "Variation Committee," to receive reports of all varieties, and assort and arrange them when convenient for publication. In this way facts from all hands would be correlated and their significance understood.

Hitherto there has been too much exclusiveness. Those who were not specialists, or great students, have thought they could do nothing, whereas, properly guided, they can do *everything!* But they must not be slighted or looked down upon because they are "beginners."

Yours very truly,
THEO. D. A. COCKERELL.

[The projectors of ENTOMOLOGICAL NEWS have had the plans for its management and publication under advisement for some time past; in fact ever since the untimely demise of "Papilio," in 1885, it has been more or less in their minds. Though for some time assured that such a journal as they hope to make it was needed they have continued to feel doubtful of its reception by the entomological public until answers began to pour in from those who received the preliminary circular alluded to above. Letters such as this from one of the most active biologists interested in our science have reached us in sufficient numbers to assure us that American and

Foreign Entomologists are much interested in our success. From these present humble beginnings we hope to move on towards even higher ideals until; with the aid of our correspondents, we reach such useful channels as Mr. Cockerell has outlined.—E. M. AARON.]

WHISTLING TREES.—A species of *acacia*, which grows very abundantly in the Soudan, is also called the "whistling tree" by the natives. Its shoots are frequently, by the agency of the larvæ of insects, distorted in shape and swollen into a globular bladder, from one to two inches in diameter. After the insect has emerged from a circular hole in the side of this swelling, the opening, played upon by the wind, becomes a musical instrument, equal in sound to a sweet-toned flute.—*Exchange.*

A GRASSHOPPER STORY.—A reformed car driver who worked for the Street Car Company of Mobile, Ala., in the days when paper currency was all the go, says that the company introduced the patent boxes which for a time headed off the boys effectually in their "knocking down" fares. But the victory of capital over labor was short-lived, for the drivers supplied themselves with large grasshoppers which they tied by the wings with a string and shoved down into the box, and when Mr. Grasshopper grabbed onto a dime they jerked him back out of the box. This was kept up for some time with great success, until one day the string broke and left the bird in the box, which gave the snap away.—*Exchange.*

JEWELS THAT ARE ALIVE.—The firefly of the South—the *cucujo*, an inch-long beetle—is occasionally brought to this country as a curiosity, and if fed on sugar-cane and kept in a moist atmosphere it can be preserved in health for several weeks. The people of the Caribbean Islands use these beetles for ornament, confined in folds of gauze, where the beautiful green light which they emit—their red light flashes only in flying—is more varied and splendid than any emerald that ever shone in a king's coronet; a number of them together under a glass make sufficient illumination for dressing or reading without producing any heat.—*Harper's Bazar.*

THE MEXICAN WASP.—The Mexican Wasp is built entirely for business. He is over two inches long when he is of age, and is about the color of a bay horse. His plunger is a full inch long and as fine as a spider's web. Unlike the stinger of a common bee, the stinger of the Mexican Wasp is non-forfeitable. He doesn't give up after one lunge, but is always ready for an all-day job if necessary. The mission of the Mexican Wasp seems to be to hunt up people to run his stinger into. The natives say that he will go ten miles out of his way to get a whack at a person. The natives seem to get fat on snake bites, centipede bites and scorpion stings, but if they discover one of these wasps in their neighborhood they hunt for cover without delay.—*Great Divide.*

# Entomological Literature.

PROCEEDING OF THE ASIATIC SOCIETY OF BENGAL, January-June, 1889 ["Issued May-August, 1889;" received in Philadelphia, Dec. 21, 1889.] Contains the following: "Three new Homoptera" (Indian species) by M. L. Lethierry.—E. M. A.

SCIENCE —Dec. 20, 1889, contains a very full and appreciative review of the work done and recently reported upon by Prof. W. A. Henry, of the Wisconsin Experiment Station, acting under the direction of Secretary of Agriculture Rusk, on certain matters connected with agricultural and entomological research on the Pacific coast.—E. M. A.

ANNALS OF THE N. Y. ACADEMY OF SCIENCE, Vol. IV, No. 12 ["Nov. 1889;" received Dec. 21, 1889.]—Contains a new genus of Termitophilous STAPHYLINIDÆ (continued)" by T. L. Casey. *T. insolens*, from Panama, is described as new.—E. M. A.

THE ENTOMOLOGIST.—December, 1889, contains "*Pararge megæra*," by Sydney Webb. The author figures and describes an aberrant form captured in Kent. "Notes on Parasites of *Atherix ibis* Fabr." by W. H. Ashmead, T. R. Billups and F. W. Frohaws. Hymenopterous insects of the genera *Antæon* and *Trichogramma* are commented on. "Notes from the Northwest Counties," by J. Arkle; collection Notes. "Entomology of Iceland," by Rev. F. A. Walker. Notes on a list of Insects taken there this year. "Contributions towards a list of the varieties of *Noctuæ* occurring in the British Islands," by J. W. Tutt.—Under "Entomological Notes, Captures, etc.," there are the usual notes on localities, odd aberations, varieties, etc. In addition, notes on "Parasites on Moths," by E. Bostock. "New views on the suborder HOMOPTERA," by W. L. Distant," and "Fungus parasitic on Insects," by George J. Grapes, are interesting. The usual reports of the Proceedings of the English Entomological Societies, and reviews of Distant's "Monograph of Oriental Cicadidæ" and Porritt's "Notes on an extraordinary race of *Arctia mendica* Linn." are followed by six pages of index, etc.—E. M. A.

FIFTH REPORT OF THE INJURIOUS AND OTHER INSECTS OF THE STATE OF NEW YORK, by J. A. Lintner, Ph. D., State Entomologist, Albany, 1889. In a work of 203 well-printed pages, the author treats of "Remedies and Preventions of Insect Attack," "Injurious HYMENOPTERA," "Injurious LEPIDOPTERA," "Injurious DIPTERA," Injurious COLEOPTERA," "Injurious HEMIPTERA," "Insect Attacks and Miscellaneous Observations," "ACARINA and MYRIOPODA," and adds a "List of publications of the Entomologist" (1888) 52 articles being enumerated, and 69 articles added in a special bibliography for 1884 and 1885. Indices, general and botanical, occupying 21 pages are added; 50 figures in the text serve to illustrate as many insect pests or friends. As is usual with

the works of this author, this report is an excellent hand-book of the yea
research in Economic Entomology in America. It is invaluable to
entomologists, whether they be interested in economic or classificato
work.—E. M. A.

CANADIAN ENTOMOLOGIST—January, 1890. This first number of V
XXII contains "*Balaninus*—Its food habits," by John Hamilton, M. I
with five illustrations of *Balaninus nucum*. The continuation of Prof.
B. Smith's "Preliminary Catalogue of the *Arctiidæ* of Temperate No
America, with Notes" [the genus *Arctia*.] "Note on the Larval Or
mentation of the North American *Sphingidæ*," by A. R. Grote. "I
scriptions of Lepidopterous Larvæ," (*Mamestra lorea*, *Phycis rubifasciel*
*Salebria contatella* and *S. celtella*). "Note on the genus Crocota a
Prof. J. B. Smith," by A. R. Grote; a controversial article. "Notes" a
"Correspondence" contain brief notes on Collecting by F. B. Caulfiel
"The Cotton Worm" around London, Ontario, by E. Baynes Reed, a
"Chrysalids (*Pryrameis cardui*) devoured by Caterpillars (*Spiloso*
*isabella*)," by S. W. Denton.—E. M. A.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE—January, 1890, contai
"*Micropteryx* larvæ," by John H. Wood. "*Coleoptera* at Cobha
Park, Kent," by J. J. Walker. "Descriptions of two new genera (*Ste*
*idea* and *Trichidea*) and of some uncharacterized species of *Galerucinæ*
by Joseph S. Baly. The species are from the Indian fauna. "Notes
the *Lepidoptera* of Mooltan," by N. Manders. "*Icerya purchasi* and
insect enemies in New Zealand," by W. M. Maskell. The briefer notes
this issue are on "*Scoparia atomalis* and *Scoparia augustea*," by Eusta
R. Bankes. "*Opostega salaciella*," by the same author. "Habits of t
Honey Moth" [*Galleria cereana*,] by C. G. Barrett, and "*Anarta m*
*tilli* at flowers," and "Identity of *Phycis adornatella* and *P. subornatella*
by the same author. "Habits of the larva of *Eudorea dubitalis*," by
Machin. "The Life-history of *Simæthis combinatana*," and "On t
flight of *Atta antarctica*," by G. V. Hudson. "*Psocidæ* and Mistletoe
by R. McLachlan, who says: "much and interesting could be written
the denizens of an old tuft of mistletoe;" "*Limnophilas hirsutus* at suga
by Geo. R. Porritt; and the usual notes on localities and captures in t
British Isles.

A review of "Indian Museum Notes, Vol. I, No. 1," which is "plann
much on the same lines as 'Insect Life,' and like it cannot fail to have
beneficial effect," is published and Obituary Notices of Dr. Franz Löw,
Vienna, aged 61; J. B. Géhin, at Remiremont, aged 73; and Prof. W
Ramsay McNab, M. D., at Dublin, aged 45, are given. The usual
counts of Society Meetings end the number.—E. M. A.

LE NATURALISTE CANADIEN December, 1889.—With this issue com
(paged 285-292) a separatum continuing the work on the *Jassides* (*Jas*
to *Pediopsis*). The rest of this number is of general interest, and
especially addressed to entomologists.—E. M. A.

THE ENTOMOLOGISCHE ZEITSCHRIFT, Dresden, Band 2, 1889, contains a very interesting and valuable paper to lepidopterists entitled: "Lepidopteren der Insel Palawan," by Dr. O. Staudinger. It covers one hundred and seventy-seven pages enumerating two hundred and eighty-three species collected by Dr. Platen. At the end of the paper are two very useful lists of species, one being systematic and the other alphabetical. About sixty new species are described, and some of them illustrated, there being two plates, containing thirty figures, which are photographic reproductions. Copious notes are given with each species listed. Among the interesting new forms were two species of *Ornithoptera*. Palawan is one of the Phillipines, and is two hundred and sixty miles long by thirty wide, the interior being mountainous, and the west flat. The products of the island are cowries, gold, ebony and other fine woods. Also two papers by C. Ribbe; one on two new diurnals from Africa, and the other on new butterflies from Banggassa, a small isle in the Celebes, illustrated by two plates, seven figures. A paper by H. Ribbe on some aberations in the collection of Gustav Borneman, is also of interest to lepidopterists.

H. SKINNER.

## Doings of Societies.

COLORADO BIOLOGICAL ASSOCIATION, West Cliff, Oct. 19, 1889.—Mr. Cockerell exhibited and made remarks on a number of Hymenoptera, in cluding *Vipio coloradensis* Ashm. ♀, collected in the Wet Mountain Valley, Col. This was only the second example of the species known.

December 14th Mr. S. H. Scudder was announced as a corresponding member. Letters from Mr. Ashmead, containing identifications of Hymenoptera and Hemiptera, and from Rev. G. D. Hulst, containing identifications of Lepidoptera, were laid before the meeting.

All these insects had been collected in Wet Mountain Valley, Custer County, Col. The Hymenoptera included *Glyphe flavipes* Ashm., *Homalotylus bifasciatus* Ashm., etc. The Lepidoptera included two new species: *Ragonotia saganella* Hulst and *Caripeta niveostriata* Hulst, and a species, *Altoona ardiferella* Hulst, of which only one specimen was previously known. T. D. A. COCKERELL, Sec.

THE ENTOMOLOGICAL SOCIETY OF LONDON, Dec. 14, 1889.—Mr. W. L. Distant exhibited on behalf of Mr. L. de Nicéville, a branch of a walnut tree on which was a mass of eggs laid by a new Lycænid butterfly, which Mr. de Nicéville had referred to a new genus and described as *Chætoprocta odata*. It was said to occur only at elevations above 5000 feet in N. W. India. Dr. Sharp exhibited eggs from a South American bug, *Piezosternum subulatum*, which, though taken from a completely rotten imago, were in a perfect state of preservation. He also exhibited a specimen of *Pœcilochroma Lewisii*, a Pentatomid bug from Japan, which, when dampened with water, turned instantly from a dull green to a metallic copper color. Mr. J. H. Leech exhibited a large number of *Lepidoptera* from Mr. Pratt, of Ichang, China, which contained fifty-six new butterflies and forty new moths. Mr. Elwes observed only two genera in this collection not known to be found at Sikkim. He called attention to the similarity of the species from India, China and Java. Mr. McLachlan remarked on having lately received a dragonfly from Simla previously only recorded from Pekin; and Mr. Distant stated that he had lately received a species of *Cicada* from Hong Kong hitherto supposed to be confined to Java. Mr. W. H. B. Fletcher exhibited a preserved specimen and drawings of a variety of the larva of *Sphinx ligustri*. Mr. F. D. Godman read a letter from Mr. Herbert Smith, containing an account of the *Hymenoptera*, *Diptera*, *Hemiptera* and *Coleoptera* recently collected in St. Vincent, where he was employed under the direction of a committee of the Royal Society appointed to investigate the natural history of the West Indies [it is understood that a work on the lines of the superb "Biologia Centrali-Americana" will in time be the product of this survey.]

Mr. Elwes read a letter from Mr. Doherty descriptive of collecting at light and sugar in the Naga Hills. Mr. Doherty expressed the opinion that light used in out-of-the-way places repels rather than attracts; the same applied to sugar, as insects required to be accustomed to these decoys, Col. Swinhoe said the attractive power of light depended on its intensity and height above the ground. He had collected over three hundred specimens of *Sphingidæ* at electric light in Bombay in one night. Mr. J. J. Walker had found electric lights very attractive in Panama. Mr. F. Merrifield read a paper entitled, "Systematic Temperature Experiments on some *Lepidoptera* in all their stages," and exhibited a number of specimens in illustration. Darkness of color and markings in *Ennomos autumnaria* resulted from the subjection of the pupæ to a very low temperature. The same had occurred in *Selenia illustraria*, where the markings had also been altered in a very striking manner. Lord Walsingham observed that exposure to cold in the pupa state appeared to produce a darker coloring in the imago, and that forcing in that stage had an opposite effect; that insects subjected to glacial conditions probably derived some advantage from the development of dark or suffused coloring, and that this advantage was, in all probability, the more rapid absorption of heat. He believed an hereditary tendency in this direction was established under glacial conditions, and that this would account for the prevalence of melanic forms in northern latitudes and at high elevations.

H. Goss and W. W. Fowler, Sec's.

Entomological News for January was mailed Jan. 15, 1890.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. MARCH, 1890. No. 3.

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## NOTES FROM THE NORTHWEST.

BY H. F. WICKHAM.

The following notes were made on my collecting trip in the summer of 1889, and may be of interest to the readers of ENTOMOLOGICAL NEWS.

The species of *Cychrus* included in the subgenus Brennus are said by Dr. Horn (Trans. Am. Ent. Soc. VII, p. 176) to be "peculiar to the true Pacific coast fauna of North America." This summer I took the common *C. marginatus* Fisch. at Mullan, Mon., and again at Helena in the same State, which extends the range a long way east. These examples differ from the western ones by being smaller and of a more uniform black.

*Carabus mæander* occurs in the Rocky Mountains at Mullan, Mon.

A special search for Pselaphidæ brought to light only the following species: *Ctenistes pulvereus* Lec., one specimen under a stone at The Dalles, Oregon. Three examples of *Pselaphus* *erichsonii* var. *longiclavus* Lec., many *Bryaxis conjuncta* Lec. and *Bry. albionica* Mots. in rubbish under logs at Cœur d'Alene, Idaho. *Tychus cognatus* and *Batrisus zephyrinus* Casey (which runs in collections as *albionicus* Aubé) occurs in moss at Victoria, Vanc. I.; the latter species also at Tacoma.

*Batrisus monticola* Casey came to hand only once in the Cascade Mountains, Yakima Co., Wash., where *Bry. albionica* was also taken. A single ♂ of *Bry. albionica* also occurred at Victoria. At Portland, Oreg., I got a specimen of *Faronus cavifrons* Casey under bark. *Bry. fundata* is found at the Spokane Falls late in July, under logs, and in the Rocky Mountains at Mullan, Mon., I took a beautiful example of *Tyrus corticinus* Casey.

*Mycetina hornii* occurs occasionally under bark throughout the Northwest, but I found in one case a colony of over seventy-five individuals under a single log in a burnt district of the pine forests covering the Cœur d'Alene region. Byrrhidæ seems to prefer burnt logs for protection, as they were always more numerous where the timber had been charred by fires. *Calochromus dimidiata* has the same habit.

In a swamp at Cœur d'Alene I found *Aphodius occidentalis* in unlimited numbers in little ditches which ran through the soft earth. They were there by thousands, dead and living, a half hour's work supplying me with above seven hundred of them. The beetles were burrowing at random in the mud, which was apparently rich enough for them to live and luxuriate in, full of decaying vegetable matter. Toads had been attracted to the feast in numbers, and, to judge from the quantity of wing covers in their excrement, had made the most of their opportunity.

*Amphicoma canina* and *A. rathvoni* are day fliers, and may be found flying in the hot sun during the early part of July, frequenting the flowers of the "Yarrow," which grows abundantly near Tacoma, where I made my observations. I do not know if the occurrence of *Cremastochilus* under bark has ever been reported. I took a few of them in such a situation at Cœur d'Alene, but they were in the company of their hosts—ants. I have called the species *pilosicollis* Horn, but there may be some little doubt as to the correctness of the determination.

The electric lights of Spokane Falls attract great numbers of *Ergates spiculatus* and *Prionus californicus*, so I made it my business to go around every night to pick them up. They come out from cracks in the sidewalks, under door-sills, and in fact from any place where they can squeeze themselves away. Then the fun begins, and, as I go down the street with my biggest collecting bottle slung on my wrist and begin picking up the "bugs," I am a centre of attraction. Next, two policemen proceed to "collar" me, and it takes half an hour of explanation to convince them that I am neither an incendiary nor a fugitive from the State asylum, and that my bottle (because, forsooth, it is marked "poison") is not a deadly weapon. At length they are satisfied though, and let me off, and I filled my bottle every night.

*Leptura* makes a brave show in these Northern regions, and all the following occur on flowers: *L. obliterata*, *soror*, *plagifera*, *subargentata*, *convexa*, *canadensis*, *erythroptera*, *lætifica*, *quadrillum*, *chrysocoma*, *crassicornis*, *crassipes* and *scripta*, most of them rather rare.

*Timarcha intricata* I found always under logs in moss. Whether it feeds on this or not I cannot say. Occurs at Portland, Tacoma and Cœur d'Alene from early June until the beginning of August. *Chrysomela exclamationis* and *conjuncta* are common in Idaho (Pocatello) on Helianthus, and *C. elegans* on willows at various points. *C. lunata* I found on rosebushes mostly, though they also appear on grasses, sunflowers, asters, and even poison ivy. I doubt if they eat any of these but the roses, however.

The Tenebrionidæ I leave for a separate paper, and will close with a few remarks on the Rhynchophora of the region. *Thricomigus luteus* is found in western Wyoming under logs and on rose-bushes. *Sitones* is everywhere, but I am not yet able to satisfactorily separate my series. *Plinthodes tæniatus* I took under logs, and the same is true of *Trichalophus didymus*. The former species I took at Tacoma and Victoria, the other is found, though rarely, over the entire northwestern corner of the United States, and as far East as Mullan, Mon. It seems to be quite variable in size and color.

*Macrops* also occurs over almost the whole region, though I took none at Victoria. At Portland I took *M. humilis* in a swamp around the roots of grass, and on the plains of Wyoming, Montana and Nebraska I found *M. vitticollis*, *tenebrosus*, *ulkei* and *obscurellus* more or less abundant.

*Sphenophorus* is abundant in the native grasses all through the central region from Nebraska to eastern Oregon, and will doubtless make itself felt as a serious pest to farmers when cultivation cuts down its present food supply. Of the species I took the following: *simplex*, *vomerinus*, *ulkei*, *inæqualis*, *ochreus*, *costipennis*, *gentilis*, *parvulus* and probably *oblitus;* all on or about the roots of various grasses.

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# LIST OF THE DRAGONFLIES (ODONATA)

Taken at Manchester, Kennebec Co., Me., in 1888 and 1889.

BY MISS MATTIE WADSWORTH.

## Tribe I.—AGRIONINA.

### Subfamily 1. CALOPTERYGINA.

1. **Calopteryx maculata** Beauvois.

1888, June 19 to Aug. 2. Many ♀ ♀ observed laying eggs on plants in brook; sometime after young larvæ appeared in great quantities. 1889, June 6 to Aug. 9. A common species near brook.

### Subfamily 2. AGRIONINA.

2. **Argia violacea** Hagen.

1888, June 23 to Aug. 2. 1889, June 19 to Aug. 9. A very common species near brook and in road.

3. **Argia putrida** Hagen.

1889, June 25, four ♂ ♂ near lake.

4. **Ischnura Ramburii** Selys, ♀ Orange variety.

1888, Aug. 8. 1889, May 25, 27, 30; June 7, 25, 27. In woods, road and near brook.

5. **Ischnura verticalis** Say.

1889, May 25 to July 2. In woods, near brook and lake.

6. **Enallagma Hageni** Walsh.

1889, June 7, ♀ ♀ 25, three ♂ ♂ ; near lake. July 6, two ♂ ♂, brook.

7. **Erythromma conditum** Selys.

1888, June 18, in field. 1889, May 25, 28; June 27, 29; July 6. In road and near brook; not common.

8. **Lestes hamata** Hagen.

1889, June 12, 27; July 6, 27. Near brook and stagnant water; but few seen.

9. **Lestes rectangularis Say.**

1889, June 25, 27; July 1, 2, 6, 24; Aug. 25; Sept. 4. A common species near lake, brook and woods.

10. **Lestes disjuncta Selys.**

1889, July 2, 6, 8; Aug. 26; Sept. 4. Near woods, brook and in road; not very common.

## Tribe II.—ÆSCHNINA.

### Subfamily 3. ÆSCHNINA.

11. **Anax junius Drury.**

1888, Sept. 5, 14, 25. 1889, June 25, 29; Aug. 20 to Sept. 29. A very common species near woods, brook, etc.

12. **Gompheschna furcillata Say.**

1888, July 11, one ♂. 1889, June 6, one ♀. Near brook.

13. **Æschna janata Say.**

1888, June 19, one ♂. Near brook.

14. **Æschna verticalis Hagen.**

1888, Aug. 28 to Sept. 27. 1889, July 16, 24, 26. Seen during Sept. with *Æ. constricta* near woods, and in pasture, near brook.

15. **Æschna constricta Say.**

1888, Sept. 3 to Oct. 19. 1889, Aug. 28, and occasionally during September. Near brook and woods.

16. **Æschna heros Fab.**

1889, June 24, 27, 30; July 9; Sept. 1. Near brook and road; not very common.

### Subfamily 4. GOMPHINA.

17. **Gomphus parvulus Selys.**

1888, June 19, one ♂; in woods.

18. **Gomphus exilis Selys.**

1888, June 15 to July 8. 1889, May 28 to June 28. A common species near woods, brook and road.

19. **Gomphus spinosus Selys.**

1888, July 13, one ♀ in woods. 1889, June 25, one ♂ in woods. July 5, observed one devouring a *Calopteryx maculata.*

20. **Hagenius brevistylus Selys.**

1889, June 18, one ♀, in woods.

21. **Cordulegaster diastatops Selys.**

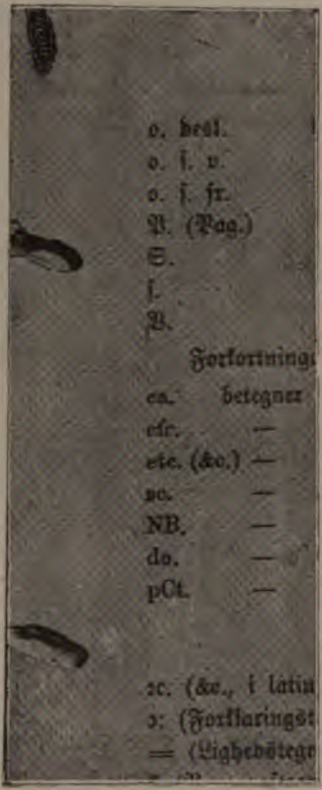
1888, July 11, near brook. Not common. 1889, June 13, one ♂.

(To be continued.)

# FOND OF GRAMMAR.

BY OTTO LUGGER.

Entomologists all know that insects are by no means very stupid animals, and know much more than is generally supposed. They learn, no doubt, by experience as well as we do, but do not, as a general rule, search for knowledge.



A few days ago a young student at the Agricultural School complained that his books at home were badly eaten by some insects, and as a specimen of the damage caused by them he brought a Norwegian grammar. And true enough the damage done was very plain, and the culprit, or rather culprits, were still engaged in the work, as may be seen in the illustration. Snugly hidden in the grammar were the larvæ and the imago of *Trogosita mauritanica*, and also the pupal skin of a third individual, already escaped. But evidently the desire to inform themselves in the Norwegian grammar had not been very great, or had been too difficult for their taste. They had not penetrated into the grammatical mysteries, but were satisfied to rest contented with a very superficial knowledge of the same. But they had gone into it to stay; had formed snug cells close to the edges, and had plugged the entrances with frass; had, so to speak, burned the ships behind them. Telling the boy that he ought to be ashamed of neglecting his books he wondered that the insects should have been able to inform me of the fact. When I also told him to remove his books from the vicinity of neglected flour, feed or similar things, he looked perplexed, and said that the bugs had told me more about his room than he knew himself, but an inspection soon showed that the books were stored upon a board resting upon a barrel filled with old bran. Evidently the larvæ, in search for suitable quarters to transform, had wandered about and had mistaken the covers of his books for the loose bark of trees, their usual abode.

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## An Interesting Method of Egg Deposition.

BY J. E. IVES.

Some time since I received from Mr. J. C. Saltar, of Pemberton, N. J., what appeared to be a dried-up mass of dead flies, about the size of a man's fist. Throughout it were scattered light-colored fragments, which had somewhat the appearance of empty egg-cases. The whole mass was very brittle, and readily crumbled to pieces. It was obtained from the under surface of the trunk of a tree overhanging a small stream.

Being unable to obtain any information as to the nature of this peculiar structure, I sent it to Dr. Williston, of Yale, with the request that he would kindly examine it. He has done so, and writes that the flies are the females of a species belonging to the genus *Atherix*, probably to *Atherix variegata* Walk. He draws attention to the fact that, in the Standard Natural History, p. 418, he makes the following reference to the subject: "The eggs of *Atherix* are deposited in large, pear-shaped masses, attached to dried branches overhanging water. Not only do numerous females contribute to the formation of these clusters, but they remain there themselves and die; the newly-hatched larvæ escape into the water."

The instinct which leads to the formation of such a mass is a very peculiar and interesting one.

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## NOTES ON BOMBUS.

BY C. ROBERTSON.

In a letter addressed to me in October, 1888, Mr. Cresson expressed the suspicion that *Apathus? elatus* Fab. was not a true *Apathus*, but that it was probably a *Bombus*, and in a letter of November he expressed the hope that I would obtain some light on the subject during the following summer. Accordingly, in the summer of 1889, I completed my observations, arriving at the conclusion that *Bombus americanorum* Fab. is distinct from *B. pennsylvanicus* De Geer, and that *Apathus? elatus* is its male. I give below the synonymy of the two species with my notes upon them:

**Bombus pennsylvanicus.**

*Apis pensylvanica* DeGeer, Mém. III, 575 (1773).
*Bombus pensylvanicus* Cress., P. E. S. II, 94, ♂ — ♀ ☿ in part (1863).

On Aug. 22, 1888, I took the sexes of this species in copula. The female was hanging by one foot to a leaf of Gerardia pedicularia. This female bore two yellow spots on the vertex; the scutellum had a little yellow; the first segment of the abdomen was entirely black. From the specimens at hand I would distinguish the female from that of *B. americanorum* as follows: Vertex always more or less yellow; scutellum more or less yellow; first segment of abdomen black, or with a little yellow on the sides; seen from above, the base of the labrum shows a transverse ridge more or less interrupted medially. The worker resembles the female.

**Bombus americanorum.**

*Apis americanorum* Fab., Syst. Ent. 380, (1775); Ent. Syst. II, 319 (1793).
*Bombus americanorum* Fab., Syst. Piez. 346, (1804); St. Farg. Hym. I, 472 (1836).
*Apis elata* Fab., Ent. Syst. Suppl. 274, ♂ (1798).
*Bombus elatus* Fab., Syst. Piez. 352, ♂ (1804).
*Apathus elatus* Cress., Proc. Ent. Soc. II, 114, ♂ (1863).
*Apathus? elatus* Cress., Cat. Described Hymenop. N. A. ♂ (1887).
*Apis nidulans* Fab., Ent. Syst. Suppl. 274, ♂ (1798); see Cress., Proc. Ent. Soc. II, 165.
*Bombus nidulans* Fab., Syst. Piez. 349, ♂ (1804).
*Bombus pensylvanicus* Cress., Proc. E. S. II, 94, ♀ ☿ in part (1863).

In Proc. Ent. Soc. II, 164, Mr. Cresson says: "On the 11th of September, 1863, a nest of *Bombus pensylvanicus* De Geer, was captured near Gloucester, N. J. It contained 6 females, 34 workers and 21 specimens of *Apathus elatus* Fab., all males. No males of *B. pensylvanicus* were found in the nest." This convinced me that a solution of the problem must be found in the nests of *B. pennsylvanicus*. Accordingly, on Aug. 20, 1889, I opened a nest of what I had always taken as *B. pennsylvanicus*. It contained 1 female and 121 workers, and 2 males of *Apathus? elatus*. On comparing this female and the workers with the female taken in copula with *B. pennsylvanicus* ♂, I came to the conclusion that they were distinct, and that the nest belonged to *B. americanorum*. On September 9th I saw the sexes of this species in copula. The same night I opened two nests, one containing 10 females, 46 workers and 10 males, and the other containing 9 females, 51 workers and 1 male.

The female of *B. americanorum* has the vertex always black; the scutellum black, or with a little yellow; the first segment of the abdomen yellow; seen from above, the base of the labrum shows two tubercles separated by a wide interval.

The males of *B. americanorum* and of *B. fervidus* may prove to be very much alike. Indeed the ♂ of *B. americanorum* resembles the ♀ of *B. fervidus* more than its own female; but I think *B. americanorum* is more nearly related to *B. fervidus* than it is to *B. pennsylvanicus*. *B. fervidus* is very rare in my neighborhood, as I have seen but two female specimens. In Proc. Ent. Soc. III, 247, Walsh mentions finding *B. fervidus* ♀ surmounted by *Apathus elatus* ♂. He was discussing the effect of mimicry, and he cites this as a case in which a Bombus mistook an Apathus for one of its own species. But the mistake was probably on the part of the entomologist; he had, no doubt, taken the true sexes of *B. fervidus*.

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# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

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SCIENTIFIC RESEARCH IN MEXICO.—An important scientific exploration is to be made of the less known portions of Yucatan and Mexico, regions which have not hitherto been systematically explored by naturalists, except in so far as archæology is concerned. It is the object of the expedition to ascertain, as a continuation of former explorations in Florida, the general structure of the basin of the Gulf of Mexico, concerning which there is much diversity of opinion among scientists.

The exploration will comprise, besides the geological examination of the region, a close examination of its zoology and botany, towards which end specialists in various departments of science will accompany the expedition. The party will be under the leadership of Prof. Angelo Heilprin, of the Academy of Natural Sciences. Accompanying him will be Mr. J. E. Ives, one of Prof. Heilprin's assistants at the Academy of Natural Sciences, who will have charge of the marine zoology; Mr. Witmer Stone, who will make the collections of botany and ornithology; Mr. F. C. Baker, of conchology and general zoology and Mr. Roberts Le Boutillier, who will be the photographer of the expedition.

Papers governing the expedition have been received from the State Department at Washington addressed to the representatives of this country in Central America and Mexico, and also from the Mexican Minister at Washington, Senor Romero, commending the expedition to the Government of Yucatan.

The expedition left New York by steamer February 15th, to stop first at Progresso, Yucatan, whence the research will extend into the interior of that State. Much of interest is expected from the expedition to this region, as very little is known of its entomological riches.

From Yucatan the expedition will be deflected to Vera Cruz, whence will begin the exploration of the Mexican lowland and of the volcanic belt which stretches westward towards the Pacific. This region, like Yucatan, despite its ready accessibility, is still to a great extent unknown to the entomologist. The determination of the limitation of the range of animals and plants and the intermingling of Northern and Southern forms will receive the first attention of the expedition.

An attempt will be made to gain the summit of the extinct volcano of Orizaba, 17,500 feet high, by some considered to be the loftiest peak in Mexico, and perhaps loftiest summit of the entire North American Continent, of the complete ascent of which no trustworthy details appear to be on record. The peak affords almost unsurpassed advantage for the study of vertical distribution of animal and plant life, since it rises from a base within a short distance of the sea, far beyond the limits of perpetual snow.

From Orizaba the course will lie towards the City of Mexico, where an examination will be made of the lakes lying on the Mexican plateau. An ascent will be made from this point of the neighboring peak of Popocatepetl, which rises to approximately the same height as Orizaba, but is much more accessible than that mountain.

From the valley of Mexico the expedition will take a westerly course, having in view the passage of the Sierra Madre Mountains and a descent to the Pacific coast. The still active volcanic foci will be made the feature of this research.

The volcano of Colima, 12,500 feet, in elevation, whose recent furious eruption gave evidence that the volcano was not, as generally supposed, extinct, and which threatened the existence of Zapotlan, will probably be the limit of the expedition, although a further attempt to reach Jorullo, rendered famous by Humboldt's narrative, may be made.

The exact route of the return journey has not yet been determined upon. It is expected, however, that it will reach home before midsummer.

A large part of the region to be traversed will lie away from civilization, necessitating travel by primitive methods, and for some distance probably the protection of an armed escort will be necessary, especially in the region of the revolted Indian tribes of Yucatan.

The expedition is organized under the auspices of the Academy of Natural Sciences, which has received the co-operation of its individual members, and also of the American Philosophical and American Entomological Societies.

This expedition, it is stated, is the first extensive one that has been organized by a scientific institution in this country to be sent outside of the bounds of the United States for many years, and its results are awaited with a great deal of interest by scientists.

The entomological collections, which will be made in all orders, will be distributed among the leading specialists, and the conclusions reached by them will be published in the Proceedings of the Academy of Natural Sciences of Philadelphia, or in the Transactions of the American Entomological Society. The narrative of the expedition will probably be published in separate book form.

Editor ENTOMOLOGICAL NEWS:—I should like to ask some of your readers if Sudbury, Ontario, is not a very Northern locality for *Calosoma scrutator?* I have always understood that if ever found North of the Great Lakes it came only as a shipwrecked mariner. While looking under pine bark for *Alaus myops* last spring, of which I took nineteen specimens in a few days, I found a fresh, living, full-sized specimen of *C. scrutator*.

Altogether, I took some 450 different species of beetles here last season, but cannot get more than half of them named. *Elateridæ* were peculiarly plentiful. I took some 200 individuals and nearly 30 species; also 42 species of *Carabidæ* and 21 of water beetles. My prize is a large green insect, apparently a *Cantharis*, but certainly not one of the common *Cantharidæ*; also several *Cerambycidæ* and *Pyrochroidæ* that local entomologists cannot determine.

Lepidopterists will be interested to know that *Colias interior*, both male and female, are quite common here in the season.—E. D. PETERS, JR.

HOP WORMS.—Late last August I found several larvæ feeding in the Hop (Humulus lupulus). I removed portions of the stems, cutting five or six inches above and below the swellings, and placed them in a box used for feeding larvæ. In about three weeks the imagos emerged, proving to be *Gortyna rutila* Guén. The vine from which they were taken was literally riddled with them. No description of the larvæ was taken at the time, but I hope to be able next season to give a more detailed account of them. Two broods of *Gortyna nitela*, with its variety *nebris*, were raised in the same manner. The larvæ were feeding in the stems of the great rag-weed (Ambrosia trifida). This larva feeds also in the stems of burdock (Arctium lappa). As far as my experience goes, all the Gortynæ are internal feeders.—C. A. BLAKE.

A CORRESPONDENT in Hardeeville, S. C., says he "witnessed a most wonderful phenomenon: from noon to sundown, with a gentle wind blowing from the southwest and a perfectly clear sky, a shower of white balls filled the air and covered the ground for a space of ten miles square, with a gentle shower of a white fleecy substance, as fine as silk, which was very strong when twisted. He was unable to account for its presence there, and had never seen anything like it before." The same thing occurs here every autumn, but I never saw it as abundant as the correspondent describes. The little balls referred to are the flocculi, or remains of the web of which the spiders make their cocoons, the excess being cut off and floats away.—C. A. BLAKE.

A NEEDLESS ALARM.—Some time ago a certain entomologist in one of the leading cities of the country who, on the Sabbath days, strives to enlighten a large and aristocratic congregation in the mysteries of the gospel, but beguiles his leisure moments by the pursuit of hexapods, happened to find a heap of refuse lying near a humble dwelling in the outskirts of the city aforesaid. The gentlemen is a devoted student of lepidopterology, but bags the beetles, also, as they chance to fall in his way. The most prominent object on the ash heap was an antiquated and effete ham, upon which numerous carrion beetles were disporting themselves. Recognizing the find as worthy of his attention, he began to collect the insects upon it. He had barely begun his malodorous task when he discovered that he was being observed, and a strident female voice from the second story of the humble dwelling rang out an excited warning—"Law sakes! man alive that ham is spiled! Nancy and me throwed it out day before yesterday! It's all blowed! Law sakes! you don't be after gatherin' up such truck as that, be ye? A well dressed man like you un hadn't orter to be rakin' in old ash heaps after somethin' to eat. Ef you're hungry come in the house an' I'll give you a bite. But (and here the voice rose to a shrill falsetto), mercy me! leave that old ham alone! It's spiled! I tell you it's spiled!" The clergyman, who carried under his waistband reminders of an elegant luncheon served an hour or two before, cannot cease to smile at the memory of the position into which his entomological ardor had brought him in the eyes of the old dame, from whom he escaped as she was coming down-stairs to open the door and offer him the hospitalities of her little home.—ANON.

## Entomological Literature.

IL NATURALISTA SICILIANO.—Anno IX, No. 1, October, 1889. [Received January, 1890.]—Contains "Lepidotteri nuovi della Sicilia," (*Tineidæ*) by F. Wocke. "Note Lepidotterologiche (cont.)," by E. Ragusa; brief notes on species running from *Antigastra* to *Aciptilia*. "*Helochares nigritulus* n. sp. (habitat Sicilia)," by Kuwert. "Tavola sinottica dei Gyrinus di Sicilia," [synoptic table of the Sicilian species of the genus

Gyrinus] by E. Ragusa. "Coleotteri nuovi o poco conosciuti della Sicilia (cont.)" [new or little known Sicilian Coleoptera] by E. Ragusa; no new species described in this part. "Una nota sulla *Chalcis Dalmannii*," by T. DeStefani. This number is accompanied by the indices for Vol. VIII of this journal.

THE WORK OF A DECADE UPON FOSSIL INSECTS 1880–1889, by S. H. Scudder [Annual address of the retiring president of the Cambridge Entomological Club Jan. 10, 1890. Excerpt from "Psyche," January, 1890.] The author here gives a comprehensive and very readable account of the work accomplished in this field in the decade just ended; a field in which, as is well known, he has been the principal laborer. In speaking of the relative abundance of fossil insects the author says: "During the past summer, in explorations for the Geographical Survey, I found that the strata of a considerable tract of country, certainly many, probably hundreds of square miles in extent, lying in western Colorado and eastern Utah, were packed with fossil insects as closely as at Florissant. There can hardly be any doubt that we shall soon be able in our Western territories to rehabilitate successive faunas as successfully as has been done with many of our vertebrate types, and as has not yet been done for insects in any country in the world. * * What we really need is a score of trained workers to 'go in and possess the land.' No one would welcome them more heartily than one who is almost a solitary worker in the American field."

BIOLOGIA CENTRALI-AMERICANA, Part LXXX of Zoology; November, 1889.—[Received January, 1890.]—Contains "ARACHNIDA ARANEIDEA," by O. Pickard Cambridge, pp. 41-48, pl. iv, 83 figs., 18 colored; 11 new species are described from the genera *Epeira*, *Turckheimia* and *Carepalxis*. COLEOPTERA as follows: Vol. III, part I, pp. 145–168, plates vii and viii, 46 figs. 20 colored. This portion on the *Buprestidæ* contains the descriptions by C. O. Waterhouse, of many new species, usually illustrated in colors. Vol. VI, part I, Supplement, pp. 153–168, plate xxxix, 34 figs. 25 colored. Many new species are here described by M. Jacoby, entirely from *Pachybrachys* and *Chlamys*. "LEPIDOPTERA *Rhopalocera*, Vol. II," by F. D. Godman and O. Salvin; pp. 153-184, plates lxiii and lxiv, 55 figs. all colored. This part contains the systematic consideration of the group from *Colias cæsonia* to *Enantia virgo*. The pale *Terias*, allied to *mexicana* in pattern, which was returned as from the Mt. Graham Range in Arizona is here determined (with an excellent figure) as *T. Boisduvaliana* Feld. = *ingrata* Feld. = *gratiosa* Reak. = *mexicana* Boisd. in "Sp. Gen." The synonymy as worked out in this part is most instructive to the student. "LEPIDOPTERA HETEROCERA, Vol. I," by H. Druce, pp. 321–336, contains the systematic treatment of this suborder from *Dyops ocellata* to *Anomis agillacea*. While reviewing this stupendous work it may interest our readers to know that the following entomological volumes have been completed: Coleoptera, Vol. I, part 1 (*Adephaga*), by H. W. Bates; Vol. I, part 2 (*Adephaga*, etc.), by D. Sharp; Vol. III, part 2 (*Mala-*

*codermata*), by H. S. Gorham; and Vol. V (*Longicornia*), by H. W. Bates and (*Bruchides*) by D. Sharp. These four volumes contain 2088 pages and 69 plates, with many hundred figures. In addition several other volumes on Coleoptera are well under way. Vol. I of the *Rhopalocera* is complete, save the index and title, running through the suborder from *Danais plexippus* to *Isaphis hera*.

INSECT LIFE, Vol. II, No. 6, December, 1889 (Received Jan. 14, 1890). It hardly seems worth while to enumerate the usual richness of the monthly issues of this most excellent periodical, as it may be had from the U. S. Department of Agriculture for the asking; no entomologist can afford to be without it. Besides short notes on "The Official Association of Economic Entomologists," "Entomology at the Paris Exposition," "The Mediterranean Flour-moth," "Spider-bites," "Scent in Dung beetles," "Beetles from Stomach of a Chuck-wills-widow," "A harvest-mite destroying the eggs of the Potato beetles," "Injury to grass from *Gastrophysa polygoni*," "Damage to Pine by *Rhagium lineatum*," Notes on "*Vedalia*" and "On *Hæmatobia serrata*," there are longer papers on "The so-called Mediterranean Flour-moth," with illustrations; "The Ox-warble (*Hypoderma bovis*), illustrated;" "Association of Economic Entomologists—First Annual Meeting," by L. O. Howard, secretary pro. tem.; "Office and Laboratory Organization," by S. A. Forbes. Following these are "General Notes" on "Oviposition of *Tragidion fulvipenne*," "Insects injuring the tea-plant in Ceylon," "On some gall-making insects in New Zealand," "Dr. Franz Löw" and "Eugene Maillot," obituary notices, and the usual quota of purely economic notes.

ILLUSTRATIONS OF TYPICAL SPECIMENS OF LEPIDOPTERA HETEROCERA IN THE COLLECTION OF THE BRITISH MUSEUM, Part 7, by Arthur Gardiner Butler, 1889, contains an account of a collection of Macro-Lepidoptera made in the district of Kangra India by the Rev. J. H. Hocking in the years 1877-79, chiefly at Dharmsala. The number of species amounts to upwards of 780, many reared from larvæ. There is a systematic list and a list of descriptions with notes. Vol. VII consists of 124 pages, 18 fine colored lithographic plates representing 249 figures.

In the COMPTES RENDUS HEBDOMADAIRES DES SEANCES DE LA SOCIETE DE BIOLOGIE (Paris) ninth series, 1890, No. 1.—M. Gaston Bouchet has a short note on the "Action of the Venom of the Hymenoptera on the gray wall-lizard." He states that he caused some wasps, bees, and other hymenopters to sting some gray lizards, some of which received eight or ten stings on the most sensitive parts, such as the eyelids, tongue, etc. In most cases the piercer remained sticking in the flesh. The lizards apparently suffered little pain, and no inflammation was visible at the places stung. None of the lizards who were stung died.

TRANSACTIONS OF THE WISCONSIN ACADEMY OF SCIENCES, ARTS, AND LETTERS, Vol. VII, 1883-87 (published 1889), contains a paper on the Attidæ of North America by George W. and Elizabeth G. Peckham. 32

genera and 79 species are described, including both new genera and species, and six plates figure details. Also by the same authors and Wm. H. Wheeler "Spiders of the Subfamily Lyssomanæ" (of the world); a number of new species are described. We have not seen plates xi and xii intended to accompany this paper.

In the SCHRIFTEN DES NATURWISSENSCHAFTLICHEN VEREINS FUR SCHLESWIG-HOLSTEIN (Kiel), Bd. VIII, Heft 1, 1889, W. Wüstnei continues his notes on the Hymenoptera of Schleswig-Holstein in his third "Beiträge zur Insectenfauna Schleswig-Holsteins."

In LE NATURLISTE (Paris) for Jan. 15, 1890, L. Planet describes the larva and nymph of *Helops striatus*, with woodcuts, and P. Dognin describes three new species of Lepidoptera from Zamora, belonging to the genera *Fidonia* and *Acidalia*.

SITZUNGSBERICHTE DER KONIGL. BOHMISCH. GESELL. D. WISSENSCHAFTEN (Prague), 1889, I, contains "Revision der in Kolenatis Trichopteren-Sammlung enthaltenen Arten," by Fr. Klapalek—a synonymical article.

ATTI DELLA SOCIETA DEI NATURALISTI DI MODENA, Serie III, Vol. VIII, fascic. ii, 1889 (published in Italian), has "Notes on Arachnida received from South America," by G. Boeris, describing four new species.

H. PIERS in Proc. and Trans. Nova Scotia Inst. Nat. Science, Vol. VII, pt. iii, describes a larva of the May-beetle with parasitical fungus.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY Vol. XVI, Jan.-Dec., 1889, (380 pp. 8 plates), contains a Revision of the species of *Cardiophorus* Esch. of America north of Mexico. by Frederick Blanchard; On the species of *Macrops* Kirby, inhabiting N. America (plate I), by W. G. Dietz, M.D.; Contributions to a knowledge of the Lepidoptera of West Africa, Paper II, (plates 2–4), and Descriptions of new species of Japanese Heterocera, by Rev. W. J. Holland; Synopsis of N. Am. species of the genus *Oxybelus*, by Chas. Robertson; Two new species of butterflies, by H. Skinner, M.D.; Catalogue of Coleoptera common to N. Am., Northern Asia and Europe, with the distribution and bibliography, by John Hamilton, M.D.; a Synopsis of the Halticini of Boreal America (pls. 5–7), by George H. Horn, M.D ; Contributions towards a monograph of the Noctuidæ of temperate N. Am.—Revision of the species of *Oncocnemis* (plate 8), by John B. Smith; and Proceedings of the monthly meetings of the Entomological Section of Acad. Nat. Sci. Philadelphia for the year 1889.

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## ERRATA.

Page 5, line 22, read type of coloration *contrary* to what obtains, etc.
" 15, line 30, for *Tenzera* read *Zeugera*.
" 19, line 1, for worm read worn.
" 20, line 25, for from read forms.
" 20, line 33, for marked read naked.

# Doings of Societies.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Nov. 12, 1889. Mr. Lugger read some notes on "The migration of the Archippus butterfly," and gave an interesting study of their spring and fall movements. He noted similar migration in *V. cardui*. Dr. Thaxter stated that he had found *Archippus* wintering along the Gulf of Mexico in vast numbers. Mr. Howard read a paper on "A few additions and corrections to Scudder's Nomenclator Zöologicus." Mr. Marlatt gave "Notes on the abundance of oak-feeding Lepidopterous larvæ this fall," and mentioned twelve species of Macrolepidopterous larvæ taken in the course of about an hour. Mr. Schwarz read a paper entitled, "Caprification," and Mr. Townsend a paper on "The fall occurrence of *Bibio* and *Dilophus*." In discussion on the last paper it was conceded that the autumnal occurrence was due to acceleration of development. W. H. FOX, M. D., Rec. Sec.

ENTOMOLOGICAL SECTION, ACADEMY NATURAL SCIENCES OF PHILADELPHIA, Jan. 23, 1890.—A meeting of this Section of the Academy was held January 23d, Dr. Geo. H. Horn, President, in the chair. Members present: Messrs. McCook, Ridings, Martindale, Skinner, Calvert, Liebeck, Wells, Westcott and several visitors. Dr. Horn exhibited some drawings illustrating points of interest in the comparative anatomy of the species in the genus Cercyon, and stated that most of the species were either introduced, or also found in Europe. The classification of the species and facts in their geographical distribution were discussed at length. Dr. McCook exhibited the first volume of his new book entitled, "American Spiders and their Spinning Work; A Natural History of the Orbweaving Spiders of the United States." He gave a resumé of the volume, and also some interesting generalizations on the facts in their natural history. On a question from one of the members Dr. McCook made some instructive remarks on Spiders as mathematicians. Dr. Skinner called attention to the donations to the cabinet: Mrs. A. T. Slosson presented a specimen of *Ecpantheria denudata* described by herself, from Florida; *Erebia magdalena* and *Argynnis frigga* var. *Saga;* two rare species, from Colorado, from Mr. Aaron; a type specimen of *Pamphila Aaroni* and two exotic butterflies donated by Dr. Skinner.—For the Recorder by H. SKINNER.

THE AMERICAN ENTOMOLOGICAL SOCIETY, Jan. 23, 1890.—At a business meeting of the Society held after the Section meeting, as above, the sum of $100 was voted toward defraying the expense of the expedition to Mexico to be undertaken under the auspices of the Academy of Natural Sciences and the direction of Prof. Angelo Heilprin. Prof. Heilprin was elected a member of the Society, and Dr. W. M. Crowfoot a correspondent. The President announced the death of Mr. J. Frank Knight, one of the oldest members of the Society, and for a number of years Recording Secretary.—For the Secretary by H. SKINNER.

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ENTOMOLOGICAL NEWS for January was mailed Jan. 31, 1890.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. APRIL, 1890. No. 4.

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# The Inhabitants of a Hickory Nut Hull.

BY JOHN HAMILTON, M. D.

While collecting Hickory-nuts last October the hulls or husks of several of the species were observed to be inhabited by some lepidopterous larvæ, and to ascertain their parentage, some of these hulls were thrown into a capped glass-jar and kept in my office.

January 8th, two ♂ specimens of a beautiful hymenopterous parasite appeared belonging, according to Mr. Cresson, to the genus *Pimpla*. On cutting open one of the hulls a nearly matured ♀ nymph was found in its host's cell, of which all that remained was the horny head; the long ovipositor ascended over the tip of the abdomen and extended along the centre of the back reaching the labrum. This example lay naked in the cell formed by the larva of the moth, having made no cocoon.

February 9th, two moths appeared, and another small, but beautiful parasite, which Mr. Cresson determined to be *Phanerotoma* (*Sigalphus*) *tibialis* Hald. (Proc. Acad. Nat. Sci. Phila. 2d s., iv, 203) the larva of which forms a thick silky cocoon in the cell of its devoured host, though three or four crawled out and spun up against the glass. This species has heretofore been known to prey on the larvæ of another Hickory Tortricid which feeds on the leaves, *Acrobasis caryæ* Grote, Papilio I, 13 and 14. It is much smaller than the *Pimpla*, which may be accounted for by the fact that the larva of the latter wastes none of its substance in forming a cocoon, and the perfect insect appears much larger than its host.

The moth was courteously determined by Prof. C. H. Fernald, and proves to be a Tortricid long known to microlepidopterists as an inhabitant of Hickory-nut hulls. It was first described by Fitch (N. Y. Agric. Rept. xvi, 459, 1856) under the name *Ephippophora caryana*, now *Grapholitha;* and again by Shimer (Trans. Am. Ent. Soc. II, 394) as *Grapholitha caryæ*. The larva when full grown excavates a cell in the hull several times larger than itself, which it lines with a silky gum. It is then about .25 inch. in length, white, except a luteous head, and 16-footed. The pupa is pale clay colored, .20 inch. long, and has on the posterior margin of each segment a transverse row of erect teeth which enables it to move about its large cell with great ease. The anterior wing cover of the moth is dusky black, with a sprinkling of scales—golden, purple and blue, and a silvery blotch near the tip. Expanse .50 to .60 inch.

The nuts attacked in their earlier stages usually abort and fall, or fail to produce a perfect kernel. In furnishing these beautiful parasites nature has been very kind to the country and village boys, as without this protection Hickory-nut hunting would not often be one of their chief autumnal pleasures.

A full grown larva, while under observation, stepped from the table, but like its leaf-rolling kindred, it let itself down very gently by a suddenly improvised thread. This was rather a surprise, as it is not known to leave the interior of the hull voluntarily till it comes forth with wings. Some evolutionists may interpret this as proof of an ancestry that had business in the outside world.

In compliance with my request, Mr. E. T. Cresson has kindly furnished a description of the *Pimpla*.

[**Pimpla grapholithæ** n. sp.—♀. Head rufopiceous, smooth and shining; vertex, face and mandibles, except tips, fusco-testaceous; palpi and scape beneath white, remainder of antennæ black; thorax smooth and polished, mpunctate, fulvous or honey yellow; metathorax piceous; tegulæ white;

wings hyaline, iridescent, nervures brown-black, upper nervure of third discoidal cell bent downwards at about the middle, so that the cell is narrowed at base; legs, including coxæ, white; spot on coxæ and trochanters within, broad stripe on femora within, tips of four posterior tibiæ and of their tarsal joints, black; abdomen brown-black, rather closely punctured, segments 2–5 above with a rounded elevation on each side about the middle; segments 1 and 3–5 quadrate; segment 2 rather longer than broad; ovipositor as long as the body, honey-yellow, sheaths black. Length .40 inch.

♂.—More slender than the ♀; head, metathorax and abdomen jet-black; face with a fine whitish pubescence; all the abdominal segments longer than broad and clothed with a short, fine, whitish sericeous pubescence; basal segment above with a longitudinal central groove. Length .37—.40 inch.

Described from one female in collection Amer. Ent. Soc. from Missouri, and two males reared by Dr. Hamilton, as stated above. —E. T. C.]

## NOTES ON LEPIDOPTERA.

BY HENRY SKINNER, M. D.

A SPHINX NOT KNOWN IN AMERICAN COLLECTIONS.—*Protoparce dalica* was described by Kirby in Trans. Ent. Soc. London (1877), p. 243. Locality Canada. There is a good figure of it on page 70 in the "Aid to the Identifications of Insects," Vol. 1, by C. O. Waterhouse. Dr. H. Strecker thinks this is an aberrant form of *P. rustica*, and such it will likely prove to be.

ARCTIA PALLIDA Pack.—Prof. J. B. Smith, in "Can. Ent." February, 1890, p. 35, says "the type of *pallida* is in the collection of the Am. Ent. Soc., where I have several times seen it. It is certainly not an *Arctia*, but perhaps nearer *Seirarctia*." The specimen in the collection of the Society was marked type on the authority of Mr. Aaron. He showed it to Prof. Packard, when he was here on a visit, who said he thought it might be his type. The specimen has a Pennsylvania locality label on it, and also Dr. Lewis' name. In the original description of the species Prof. Packard says, "I am indebted to Mr. Calverly for the loan of this fine, and apparently very rare species." Locality given is New York. The specimen in question, in my opinion, is an aberration of *Hyphantria cunea* of Drury, but it also answers to the description of *A. pallida*. Is *pallida* known to exist? has any one the species? Is our specimen the type?

In "Notes on Cuban Sphingidæ," Proc. Ent. Soc. Phila., p. 79, 1865, Mr. Grote refers to *Œnosanda noctuiformis* Walker, and refers to the specimens in the collection Ent. Soc. of Phila. which came from Cuba, and were presented by Prof. Poey, being No. 835 of his MS. catalogue. I have compared these with specimens in our North American collection labeled *Cautethia Grotei* Hy. Edwards, and can see no specific differences. If there is no difference between the Florida and Cuban specimens it seems likely that there is but one species inhabiting the West Indies and that Walker's type from San Domingo represents the same thing. If but one species is found in San Domingo, it will probably be found to be identical with the one inhabiting Cuba and Florida.

SOME SYNONYMY.—*Phyciodes ianthe* Fab., = *Acca hera* Hüb. Samml. Ex. Schmett. Band 2, figs. 1 and 2 ♂, 3 and 4 ♀ = *Eresia Texana* Edw., Pr. Ent. Soc. Phila., 2, 81, 1863, = *Smerdis*, Hew., Ex. But. 3, pl. 5.

## NOTES ON COLEOPTERA.

BY CHAS. LIEBECK.

While visiting some friends near Landisville, N. J., during the summer of 1888, my attention was directed to the damage caused by the common Rose bug, *Macrodactylus subspinosus* Fab., to the young grapes in their vineyard, situated about two hundred yards from their house. About the same time they planted a few rose bushes of the common free blooming variety in front of the house. In June, 1889, the beetles again made their appearance in large numbers, but showed a decided preference for the roses, not molesting the vines in the least. The bushes, at a short distance, appeared to be scorched, but a nearer view showed that they were being devoured by the beetles, and although the bushes had grown to a large size, bearing hundreds of buds and flowers, none seemed to have escaped their voracity. If others similarly afflicted would plant a hedge of roses in the vicinity of their vineyard it may prevent damage by this pest to their grapes.

### TWO NOVEL BEETLE TRAPS.

During the warm days in the early spring of last year I was collecting Coleoptera in the fields towards evening, taking such species as generally fly just before dark. I usually selected a piece of meadow-land with a bank of earth five or six feet high running through it, thus making it easier to see the insects against the horizon as they flew over. Accompanied by a white setter dog, I happened to glance at him while sitting by my side and noticed a number of specimens running along his back among the hair. I captured these, and laughable as it may seem, thereafter found it much more profitable to send him running along the top of the bank and act as a trap, than by the usual method. I took numbers of small Carabidæ, Staphylinidæ, Scydmænidæ, Pselaphidæ and Nitidulidæ in this way, which were evidently attracted by his white coat in the semi-darkness. A wide ditch, the surface of which was covered with a small floating water plant, a species of Lemna, served as the other trap. A large swamp-oak on its borders was very attractive at night to numbers of Lachnosterna, which, in returning to the ground in the morning, flew into the water, no doubt mistaking it for solid ground, where they staid until their sluggish movements met the eyes of a collector happening that way soon after, when they were immediately fished out and transferred to his bottle. Although a large number of specimens were taken, I believe, but two species were represented, *L. micans* Knoch. and *L. hirticula* Knoch.

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## NOTES ON ELATERIDÆ.

BY GEO. H. HORN, M. D.

In the Annales Soc. Ent. Belg., 1889, Dr. Candeze resumes his descriptions of Elateridæ in a "Quatrieme fascicule" of fifty-seven pages. The descriptions are brief, but ample, and concerning them he makes the following comment, which I translate :

"Entomologists have been often able to observe that it is not the longest descriptions which are the best. By too many details, in which one loses himself, and which apply definitely and very often to the specimen only which the describer had before him, it becomes impossible to figure to one's self the species which it is desired to recognize."

The following North American species are described :

*Alaus canadensis.* Allied to *myops*, but with the dark color of *melanops.* I have a specimen from Canada which responds fairly to the description, which seems hardly specifically different from *myops.*

*Monocrepidius peninsularis.* Compared by Candeze with *vespertinus*, and from the series in my cabinet, certainly a variety of it. Florida.

*Heteroderes lantus.* The species of *Heteroderes* were included by LeConte in Monocrepidius. From the description *lantus* is about the size of *vespertinus*, and of the color of *sordidus*. It is of the type (*fide* Cdz) of certain East Indian species, and I suspect requires further confirmation as a member of our fauna. Florida.

Dr. Candeze, in passing, speaks of the revision of Drasterius by LeConte in 1884 (posthumous), and says that the union of several under the name *elegans* seems "rigoreuse." It is probable that sufficient cause determined such action on LeConte's part.

*Melanotus peninsularis.* This is the species determined by LeConte as *clandestinus* Er. and distributed as such in all our collections. Florida.

*Corymbites trunculentus.* Black, thorax with ferruginous side margin; elytra ferruginous brown. Allied to *volitans* and *sagitticollis.* Long. 14 mm. California.

*Corymbites urostigma.* Brown, elytra with apical testaceous spot; third joint of antennæ long. Long. 13 mm. California.

*Corymbites gracilis.* Æneo-piceous, third joint of antennæ shorter than the fourth. This is, without doubt, *C. monticola* Horn, from the same region. N. California and Oregon.

*C. floridanus.* Closely allied to *divaricatus*, and differing in having the hind angles shorter and not divaricate. My examination of a specimen sent me led me to believe it merely a variety of that species. Long. 9 mm. Florida.

*Asaphes Lecontei.* This is a species which has long been in our cabinets unnamed, as I have never been able to satisfy myself as to the proper genus. It is of piceous color, elytra yellowish testaceous, the suture and border darker.

*Sericus Behrensi.* This is *Sericosomus incongruus* Lec., which Candeze seems to have lost sight of. The name is in his index as *Atractopterus incongruus*, but no mention of it occurs in the volume.

In addition to the above I desire to make known two interesting items furnished me by correspondents :

*Megapenthes limbalis* Hbst., is the male, and *granulosus* the female of the same species. Mr. M. Linell informs me that they have several times been taken in copulation by himself and others. Certainly, all the specimens I have seen confirm this, as the one is always male the other female.

*Corymbites inflatus* Say, is the male, and *crassus* the female of the same species. To Mr. Frederick Blanchard this information is due, and he has made the same observation here as has been made in the preceding species.

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## LIST OF THE DRAGONFLIES (ODONATA)

Taken at Manchester, Kennebec Co., Me., in 1888 and 1889.

BY MISS MATTIE WADSWORTH.

(Continued from p. 37, Vol. I.)

**22. Cordulegaster maculatus Selys.**

1888, June 19, to July 11. 1889, May 15, June 6, 13, 22, 24. This species not very common, but several ♂ ♂ seen on dates mentioned flying directly over brook and following its course. Few ♀ ♀ observed.

**23. Cordulegaster obliquus Say.**

1889, June 29, one ♂, near brook.

### Tribe III.—LIBELLULINA.

### Subfamily 5. CORDULINA.

**24. Macromia transversa Say.**

1888, May 27, to July 10. 1889, May 15 to June 25. A very common species in woods, field and near brook.

**25. Epitheca Walshii Scud.**

1888, July 16, one ♂, near brook.

**26. Epitheca forcipata Scud.**

1889, May 29, one ♂, in woods.

**27. Cordulia semiaquea Burm.**

1888, June 15 to July 9. 1889, May 15 to June 28. A very common species in woods, near water and everywhere.

**28. Cordulia lepida Selys.**

1888, July 11, one ♀, near brook.

**29. Cordulia libera** Selys.

1889, June 6, one ♂.

**30. Cordulia Uhleri** Selys.

1889, May 18, 23, 25, two ♂, three ♀ taken. All near road.

**31. Cordulia princeps** Hagen.

1889, June 19, 24, one taken each day. Near road and brook.

**32. Cordulia new? species.**

1889, May 29, one ♀, near woods.

### Subfamily 6. LIBELLULINA.

**33. Libellula exusta** Say.

1888, June 15; July 7, 9. 1889, May 18 to June 25. This species quite common near woods and brook.

**34 Libellula quadrimaculata** Linn.

1888, June 19; July 8–11. 1889, May 15 to June 24. A common species in 1889.

**35. Libellula pulchella** Drury.

1888, July 7 to Aug. 2. 1889, June 25 to July 16. This species observed near water, woods, and in open fields.

**36. Libellula incesta** Hagen.

1889, June 18, 19, 22, 25; July 9, 16. But few of this species taken. Near lake, woods, and in road.

**37. Libellula semifasciata** Burm.

1889, June 21, one ♂; July 11, one ♂. Near brook.

**38. Leucorhinia intacta** Hagen.

1888, June 16, one ♂, in open field. 1889, May 25 to July 4. A very common species (1888) near brook, woods and road.

**39. Leucorhinia proxima** (Hagen ms.) Calvert.

1888, July 10, 11, 16. One ♂ taken each day, all near brook.

**40 Diplax rubicundula** Say.

1888, June 29 to July 30. 1889, June 28 to Aug. 21. A very common species everywhere.

**41. Diplax vicina** Hagen.

1888, Aug. 1 to Oct. 11. 1889, Aug. 3 to Oct. 9. This species also very common everywhere.

**42. Diplax costifera** (Uhler ms.) Hagen

1888, Sept. 6. 1889, Aug. 2 to Sept. 14. This species quite common, but all taken were females.

**43. Diplax new? species.**

1888, Aug. 6, one ♂, five o'clock P. M., in field.

One or two specimens of each of the species mentioned in the foregoing list were identified by Mr. Philip P. Calvert, of Philadelphia, and from these the others were identified by me. All the species noted were taken in Manchester, Kennebec Co., Me.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of Entomological News solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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"Entomology must always be, as it undoubtedly is at this time, not only a useful, but a popular study, and must contribute, perhaps, more than any other to the enjoyment and recreation, mental and physical, of those dwellers in towns who possess a true appreciation of the pleasures and interests attaching to country life. I think it would be difficult to over-estimate the civilizing and refining effect which a day in the country with the object of gaining an insight into the marvels of natural creation, none the less wonderful because in themselves common and widely distributed, must have upon the minds and characters of all who seek such enjoyment."—Lord Walsingham.

Writing from Darjeeling, British Sikkim, under date of Jan. 13, 1890, Miss Adele M. Fielde refers to a visit she paid to the shop of Mr. Paul Möwis, dealer in Tibetan curios and butterflies, 1 Victoria Terrace. Mr. Möwis is one of the five Europeans who has ever traveled in Tibet. He makes very valuable collections of Himalayan butterflies, which he sends to museums in all countries. He exhibited to Miss Fielde the male of a pair of butterflies (*Teinopalpus imperialis*) whose mate he had sold to a museum in Berlin for £25 sterling. This was the largest sum he had ever received for an insect. The male was exquisitely beautiful, bright green and gold. The female was said to have "six tails."

Miss Fielde incloses a beetle of the family Chrysomelidæ, which she obtained from a ragged girl on the Himalayas, who brought it to the train for sale. When she took the insect in her hand she at first thought it must have been artificially gilded, so truly like metallic gold was its ornamentation. This does not remain after death.

Dr. David Sharp, the eminent entomologist, and late President of the Entomological Society of London, has accepted the appointment of Curator of Zöology in the Museum of the University of Cambridge.

IN answer to Dr. Skinner's article in ENTOMOLOGICAL NEWS, Vol. I, p. 20, in which he desires to correct an error I made in describing the cocoon of *Callosamia angulifera*, I should like to say that the cocoon of *angulifera*, which I bred, could only be distinguished from that of *Promethea* by its larger size. I have also distinct evidence that the larva of *angulifera* will spin a silken thread, by means of which it hangs to branches of trees. The cocoon of *angulifera* when spun on the ground is exactly as Dr. Skinner describes it. I was unacquainted with this form when I made my description (Ent. Am. V. p. 200).—WM. BEUTENMULLER.

What Mr. Beutenmüller says is undoubtedly true, *angulifera* does spin a thread occasionally, but it is the exception that proves the rule. Mr. Philip Laurent, in a large collecting experience found one suspended, all the others he has found were under tulip poplar trees. Mr. F. M. Jones sent me one with the silken thread. I have collected in a single day more than a quart of *angulifera* cocoons, not all of them alive, however, and never saw one suspended, and for negative evidence I may say I have found thousands of *promethia* cocoons on poplar, etc., and never had an *angulifera* emerge from them.—H. SKINNER.

LORD WALSINGHAM, in his Presidential address, estimated the number of species of insects as upwards of two millions, and further said, "we may well ask ourselves who can venture to assume the appellation of 'Entomologist?' or even of Lepidopterist or Hymenopterist? Surely, our successors in this Society must one day be content to be called Pieridists, Gelechidists, Hispidists, or Cicindelidists, according to their different branches of study."

"WE have abundant evidence that the whole field of zöological research apart from Entomology is but small as compared to that in which the Fellows of this Society (Ent. Soc. London) are interested, when we see that in Central America one small family of Coleoptera, the Hispidæ exceed the whole of the mammalia."

Dr. W. L. ABBOTT has left the Kilimanjaro region. He was heard from at Zanzibar, and intended to leave there shortly to study the fauna of the Comoro Islands and Madagascar.

EREBIA EPIPSODEA. In "Butterflies of North America," Pt. 9, Vol. iii, Mr. W. H. Edwards gives us a very interesting account of *E. epipsodea*. He gives as its geographical distribution "Middle Colorado northward to the Arctic Sea." It comes, however, a little further South than this, and it may be worth while to fix its most southern point as at present known. Mr. H. W. Nash informs me that he has taken it at Music Pass, Custer County, Col., and at Bonanza, Sagmache County, Col. The first of these localities is about N. Lat. 38°, the other is rather more northern.—T. D. A. COCKERELL, West Cliff, Custer County, Col.

ON JANUARY 20th, while in Baltimore, I captured a fine specimen of *Chion cinctus* Drury, crawling on the sidewalk. *Ergo:* the early bug catches the pin.—C. A. BLAKE.

# Entomological Literature.

TRANS. ENT. SOC. London, for the year 1889, Part IV, "On some Lepidoptera from New Guinea," by Edward Meyrick. This paper consists of sixty-seven pages, in which a number of new genera and species of moths are described. "On the distribution of the Charlonia group of the genus Anthocharis," by George T. Baker. "A revision of the genus Argynnis," by Henry J. Elwes. A new species is described under the name *hanningtoni;* it was taken at Taveta, near Mt. Kilimanjaro, in Africa. This paper is a very interesting and important one to American students, and will probably be reviewed later at some length. "Additional notes on the genus Hilipus," by Francis P. Pascoe.

From the PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM "Annotated Catalogue of the Insects collected in 1887–88," by L. O. Howard. The insects received were the part products of the scientific results of explorations by the U. S. Fish Commission steamer "Albatross." The *Hemiptera* were sent to Prof. P. R. Uhler, of Baltimore, Md.; the *Orthoptera* to Mr. Lawrence Bruner, of Lincoln, Neb.; the *Diptera* to Prof. S. W. Williston, of New Haven, Conn.; the *Lepidoptera* to Rev. W. J. Holland, Pittsburgh, Pa.; and the *Mallophaga* to Prof. Herbert Osborn, of Ames, Iowa." Dr. Holland describes, as new to science, *Protoparce calapagensis* from Charles Island, Galapagos.

The ENTOMOLOGIST, February, 1890.—"New species of Lepidoptera from China," by J. H. Leech. The specimens were collected near Ichang, Central China, and fifty-six new species are described, all diurnals. "Coleoptera at Camber during 1889." "An entomological tour on the Tableland of Mount Arthur," by G. V. Hudson." "On the occurrence of *Hesperia lineola* in Essex," by A. J. Spiller. *Rhopalocera* in Switzerland. "On the variation of *Heliophobus hispidus* at Portland," by N. M. Richardson. "Gas-lamp entomology," by J. Arkle. The remaining part of the number consists of notes, captures, etc., and the doings of societies.

"RHOPALOCERA NIHONICA: a description of the butterflies of Japan," by H. Pryer. Part 3 for December, 1889, has arrived, completing the work. Owing to the lamentable and untimely death of the author on the 17th of February, 1888, the preparation for the press of the unpublished portion of the work was undertaken by James Bisset, F.L.S. The text is in English and Japanese, and colored figures, notes, description of species, time of appearance and food-plants are given.

TRANS. KANSAS ACAD. SC. Vol. II, 1887-88.—"Notes on the early stages of *Nerice bidentata*, *Anisota stigma* and *Callimorpha suffusa*," by C. L. Marlatt.

ANNALS AND MAGAZINE OF NATURAL HISTORY.—"Description of a new genus of Oriental Cicadidæ," (*Talainga*) by W. L. Distant. "Description of two new species of *Acræa* from Mombasa," by H. Grose

Smith. "Observations on some Coleoptera from the Bonin Islands," by C. O. Waterhouse and C. J. Gahan. "Description of three new species of butterflies from New Ireland," by H. Grose Smith. "Seasonal dimorphism in Japanese butterflies," by Dr. Adolf Fritze.

"Les Parnassiens de la Faune Palearctique," par Jules Léon Amstat, Leipzig, 1889.—This is practically a monograph of the genus, all the species being mentioned, except our American *Parnassius clodius*. There are two hundred and twenty-two pages devoted to descriptions, history, etc., of the species and varieties, and thirty-two plates, representing a number of figures delineating the species, varieties and comparative anatomy. The figures are fine examples of chromo-lithography.

"S. African Butterflies: A monograph of the extra-tropical species," by Roland Trimen and James Henry Bowker, Vol. 3.—Papilionidæ and Hesperidæ. This volume completes the work; it contains four hundred and thirty-eight pages and twenty-eight colored figures. These three volumes make a very valuable addition to the literature of the subject, and are very exhaustive.

The Zoologischer Anzeiger for Feb. 10, 1890, contains a summary of J. Carriere's studies "On the embryological development of the Wall Bee (*Chalicodoma muraria* Fab.)

Le Naturaliste for Feb. 15, 1890, contains an article by L. Cuénot, "On the means of defense of Arthropods," including references to insects, and P. Dognin describes a new lepidopter from Loja, *Oxytenis? ecuadorensis*.

The Entomologische Nachrichten (Berlin) for February, 1890, contains "*Pentathemis membranulata*, a new Australian Libellulid with five-sided cardinal cell," by Dr. F. Karsch, describing a new genus *Pentathemis* (family *Cordulina*), type *P. membranulata* n. sp. from Torres Strait, with a woodcut of forewing. "On varieties of European Cicindelidæ," by H. Beuthin. "On Galls and Gall-flies from flower-heads of various Compositæ (continued)," by J. J. Kieffer, including *Cecidomyia florum* n. sp. "New Histeridæ (Coleoptera)," by Joh. Schmidt (continued), nine species of the genera *Stictostix*, *Tribalus*, *Pelorurus* and *Saprinus*, from Australia, Africa and South America. Some shorter notes and notices of recent entomological works.

Indian Museum Notes (economic) Vol. 1, No. 2; one hundred and twenty pages, three plates, Calcutta, 1889; published by authority of the Government of India.

In Le Naturaliste (Paris) for Feb. 1, 1890, Ed. André has a note on "Les larves de Malachius (Coleoptera, fam. Malacodermidæ)," with two woodcuts of the larva of *M. bipustulatus*. P. Dognin diagnoses two new Lepidoptera from Zamora, Amaluza and Loja—*Acidalia adela* and *Caberodes snellenaria*.

The ORVOS-TERMESZETTUDOMANYI ERTESITO (Medical and Natural Science Communications, being the organ of that Section of the Transylvanian Museum Union), Vol. XIV, 3 heft, 1889, contains "Contributions to the Coleopterous fauna of Transylvania," by L. V. Méhely. It is a list of species with notes in Hungarian. A German summary is given p. 295; also a "Notice of his entomological excursion into Széklerland," by Dr. A. Balint; a general list of insects taken.

LE NATURALISTE CANADIEN for January, 1890, contains notes on the Jassidæ (Hemiptera-Homoptera) of the province of Quebec, and describes as new,—*Thamnotettix decipiens* and *Bythoscopus pruni* (Fitch ms.)

In the TRANSACTIONS OF THE MARYLAND ACADEMY OF SCIENCES for 1888-89, pp. 33-44, Prof. P. R. Uhler describes some "New genera and species of American Homoptera." The new genera are *Scaphoideus* (fam. Jassidæ), type *J. immistus* Say and three new species; *Dyctidæ* (fam. Issidæ), type *D. angustata* and one other new species; *Dictyobia* (Issidæ), type *D. permutata* n. sp.; *Dictyonia* (Issidæ), type *D. obscura* n. sp., *Danepteryx* (Issidæ), type *D. manca* n. sp.; also a new species of *Tilicen* (*cupreo-sparsa*). Most of these new species are from California.

In IL NATURALISTA SICILIANO for Dec. 1, 1889, B. Grassi and G. Rovelli publish their sixth memoir on the Progenitors of the Myriapods and Insects by a (continued) study on the Italian *Thysanura*. Four new species of *Lepisma* are described.

We have received from the author a copy of "Die Tagfalter (*Rhopalocera*) Europas und des Caucasus. Analytisch bearbeitet von K. L. Bramson. Kiew. Verlag des Verfassers, 1890." In this work Prof. Bramson publishes analytical tables of the families, genera and species of the butterflies of Europe and the Caucasus, with notes on the distribution and time of appearance of each species. A list of all the species (330 in number) with their varieties and synonyms, and alphabetical lists of the families, genera and species are given. One plate showing the terminology of the wings and head of a lepidopter accompanies this work, which ought to be of great use to students of the European *Rhopalocera*.

R. Moniez has a (continued) paper on the "Acari and Marine Insects of the sides of the Boulonnais" in the "Revue Biologique du Nord de la France (Lille)," 2me Année, No. 5, Fevrier, 1890.

The ENTOMOLOGISK TIJDSKRIFT (published in Swedish, with short resumés in French, by the Entomological Society of Stockholm) Arg. 10, 1889, Häft 1-4, contains, besides other notes, the continuation of H. D. J. Wallengren's "Skandinaviens vecklarefjärilar," relating to the Tortricidæ. "New contributions to the myriopodology of Scandinavia," by C. O. v. Porat. Lists of entomological papers of 1888, relating to Scandinavia and Finland, and a new species of *Charaxes* (*regius* from the Cameroons), by Chr. Aurivillius.

The Zweite Abtheilung of Dr. Arnold Lang's Lehrbuch der Vergleichenden Anatomie (Text-book of Comparative Anatomy), Jena, 1889, contains that portion of the work treating of the Insecta. According to the classification here adopted the Insecta (*Hexapoda*) are divided into sixteen orders. Dr. Lang successively treats of the External Organization, Integument, Musculature, Alimentary Canal, Nervous System, Sense Organs, Circulatory System, Fat Bodies, Respiratory System, Sound-producing Apparatus, Sexual Organs, Dimorphism and Polymorphism, Development and Life-history, and Phylogeny of Insects. A bibliography of important works on the anatomy, development, etc., of insects completes this section.

ZOOLOGISCHER ANZEIGER for January, 1890, No. 326, contains "Further observations on the Dorsal Gland in the Abdomen of *Periplaneta* and its allies," by Edw. A. Minchin. "Note on the Sexual Apertures of the Lepidoptern Chrysalis," by W. Hatchett Jackson. Note on H. T. Fernald's paper entitled, "External Sexual Markings of Pupæ."

"Butterflies of North America," by W. H. Edwards, third series, part 9, contains figures and descriptions of *Arg. nevadensis* ♀, *A. halcyone* ♀. Life-history of *Arg. aphrodite*, *Satyrus pegala*, *Sat. alope* var., *Erebia epipsodea*, figures and life-history, also figure of *epipsodea* var. *Brucei*.

ENTOMOLOGIST'S MONTHLY MAGAZINE, February, 1890, "*Gelechia portlandicella* n. sp." by N. M. Richardson. "*Nepticula auromarginella* n. sp." by N. M. Richardson. "Description of the *Micropteryx* of the hazel (*M. Kaltenbachii*)," by H. T. Stainton. "Notes on Dr. Jordan's observations on Norwegian Lepidoptera," by W. M. Schöyen. "On the Coleoptera found in a small mossy bank at Knowle, Warwickshire," by W. G. Blatch. "Notes on the metamorphoses of two species of the genus *Tinodes*," by Kenneth J. Morton. "Observations on Coccidæ," by Albert C. T. Morgan. *Diaspis zamiæ* n. sp. described. "Descriptions of new species of South American Halticidæ of the group *Œdipodes*," by Martin Jacoby.

AMERICAN NATURALIST, January, 1890, "Rectal Glands in Coleoptera," by H. T. Fernald.

## Queries and Answers.

P. C. TRUMAN writes, "will you kindly give me a little aid through the NEWS. Some of my set specimens of butterflies and moths show spots, which have seemed to slowly spread. These spots are darker than the balance of the wing, and they look shiny and oily. What is the matter, and what is the remedy?"——The disfigurement is due to oil being absorbed by capillary attraction into the wings from the body. Why some specimens grease and others do not is probably not known. Take a tumbler or other convenient vessel and press into the bottom of it a piece of cork so that it will remain tightly wedged, then pin in your oily specimen and pour in the glass enough gasoline, refined benzine or chloroform, to cover it to the depth of an inch above the wings, and then cover the glass to prevent evaporation. Allow it to remain for three-quarters of an hour, then take out the specimen and put it to dry in a place free from dust. This treatment makes them look fresh and bright, and relieves them of all traces of oil. If afterwards the specimen needs resetting it can be relaxed as usual. The same gasoline can be used a number of times.

Dr. A. E. KUNZE writes as follows: "As a suggestion I would offer the desirability of giving stations for insects the same as botanists give localities for all plants inhabiting a certain radius of miles. Botanical catologues of local stations are issued by several societies. Is it not feasible in the field of entomology? Why not try the experiment? Would it not assist working entomologists? Surely many insects are as local as plants."—— This has been done to a certain extent, but not as commonly as in Botany. Careful and accurately made local lists are very useful to the collector, the student of geographical distribution and the economic entomologist, and their value is enhanced if the dates of occurrence are given.

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# Doings of Societies.

ENTOMOLOGICAL SECTION ACADEMY NATURAL SCIENCES OF PHILADELPHIA, Feb. 27, 1890.—Members present: Messrs. Cresson, Martindale, Smith, Blake, Ridings, G. B. Cresson, Laurent, Skinner, Calvert, Liebeck, Westcott, Castle and Seeber. Dr. Geo. H. Horn, Director, in the chair. Mr. Martindale exhibited a living specimen of *Belostoma Americana?* which had cut off a water supply by being wedged in a pipe, and had been found by the aid of a plumber. He stated that he had endeavored to find a description of the species, but had failed, as nearly all authors attributed the description to Leidy in Vol. 1, 2d ser. Jour. Acad. Nat. Sci. Phila., p. 58, but it is not given there. The poisonous character of the insect, and its habit of preying on shell fish, young trout and other fishes, were discussed at length. Mr. Charles Liebeck exhibited specimens of a new species of *Cenbrinus?* which he had first noticed in June, 1886, feeding on Chenopodium album, a plant introduced from Europe. Dr. Horn said the species was indigenous, for the reason that the genus was not found in Europe. He also called attention to the small characters in the Coleoptera, which are often overlooked, and spoke of their importance from a classificatory standpoint, for if they were properly studied it was not unusual to find them develop into larger structures which could be used to advantage in classification. He promised to speak later on in regard to *Cercyon* and its allies, and their mutual relationship. Mr. Liebeck donated to the cabinet specimens of *Tachygonus centralis* and *Mecynotarsus candidus*. Mr. Calvert presented one male type of *Leucorhinia proxima* n. sp. and one female of *L. intacta* Hag.

COLORADO BIOLOGICAL ASSOCIATION, West Cliff, Feb. 1, 1890.—Mr. Cockerell exhibited a number of galls found at West Cliff, Col., including those of *Rhodites fusciformans* n. sp., *R. bicolor* Harr., *R. rosæfoliæ* Ckll., *R. ignota* O. S., *Cecidomyia salicis-siliqua* Walsh.

February 22d.—Mr. T. Charlton exhibited specimens of *Cemthophilus maculatus* Scud., which he had found in the Powhattan Mine, near Rosita, Col., about 250 feet from the entrance. Two subterranean occurrences of this species had already been recorded by Packard ("Cave Faun. of N. Amer." p. 72) in Massachusetts and New York. Mr. Cockerell exhibited an apparently new genus and species of Elateridæ found at West Cliff, and remarked that this insect was now being studied by Dr. Horn, with a view to ascertaining its precise relationships. On behalf of Mr. H. G. Smith, Jr., the following Coleoptera, collected by him at Denver, were exhibited: *Bruchus obsoletus* var. *fabæ* Riley, *Euryomia inda* L., *Silpha lapponica* L., *Chauliognathus basalis* Lec. and *Hippodamia convergens* Guér. A letter from Mr. L. Bruner, containing identifications of Colorado Orthoptera was laid before the meeting. Among the Orthoptera was an apparently new species of *Ameles* from Custer County.

T. D. A. COCKERELL, Sec.

## MORE MISTAKES.

Some of our readers have kindly pointed out a number of oversights in proof-reading, which we desire to correct.

Page 15, line 30, for *Tenzera* read *Zeuzera*. An unsuccessful attempt was made to correct this error in the errata given at bottom of page 47.
Page 21, line 16, for 1886, read 1836.
" 26, " 20, for ABCANTHIA read ACANTHIA.
" 27, " 20, for symmetrical read asymmetrical.
" 29, " 18, for Frohaws read Frohawk.
" 30, " 19, for Cobhane read Cobham.
" 30, " 33, for Limnophilas read Limnophilus.
" 48, last line, for January read February.

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☞ ENTOMOLOGICAL NEWS for January was mailed Jan. 15, 1890; for February, Jan. 31, 1890; for March, Feb. 27, 1890.

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,
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# What are the uses of bright colors in Hymenoptera?

BY T. D. A. COCKERELL.

Following somewhat on the lines indicated in my letter published in the February number, p. 27, with the editor's permission, I will put the above question to your readers. Hereafter, I may have something to say on the uses of color among insects in general, but the present question seems so suitable for general investigation that I will briefly give some of the *pros* and *cons* and leave your readers to work the matter out themselves if they will. In that admirable work, "Darwinism," Dr. A. R. Wallace lays considerable stress on "Warning coloration," and shows that many animals are conspicuously colored as a sign that they are dangerous or inedible. With insects this is said to be specially noticeable, and thus insectivorous birds and other enemies of the insect tribes get to know and avoid those they cannot eat, to the great advantage of such.

On p. 233 of "Darwinism" is a reference to the Aculeate Hymenoptera in this connection, as follows: "We all know how well marked and conspicuous are the colors and forms of the stinging wasps and bees, no one of which in any part of the world is known to be protectively colored like the majority of defenceless insects." Reading this I at once called to mind the numerous dull-colored species of *Andrena*, *Halictus*, etc., and the brilliantly-colored, non-aculeate Chrysididæ and Chalcididæ, so that it seemed to me that in this case, at any rate, "warning coloration" was not self-evident, so I submitted the point to Dr. Wallace, himself, who replied:

"Though the Andrenidæ are not usually gayly colored, yet they are not *inconspicuous*. The Chrysididæ are, I should think, colored so brilliantly partly, perhaps, to simulate stinging species, and partly to prevent their being taken for fruits or seeds when rolled up. They are *very* hard, and like many hard beetles are colored as a *warning of inedibility*." (A. R. Wallace *in litt.* Feb. 10, 1890)

Here it would be interesting to learn whether the Chrysididæ* are eaten by insectivorous birds. A spider, *Xysticus cristatus*, has been recorded as preying on *Chrysis ignita* in Lincolnshire, England, by Mr. H. W. Kew.

But to return to the *aculeata*, are they notable for warning coloration? To ascertain the exact state of the case from one who has paid much attention to the subject. I applied to Mr. Ashmead and here is his reply:

"The family Chalcididæ is without doubt the most extensive in the order, and taken as a whole the most brilliantly colored; no other family, not even excepting the Chrysididæ, can compare with it in the metallic brilliancy of its members. "In my opinion, when the species are thoroughly worked up, in this single family alone, their members will more than double the species in *all* the families of the *Aculeata* taken together, so numerous are they.

"It is really only among the parasitic bees that we find much brilliant metallic coloring, a few genera in Apidæ and Andrenidæ.

"In Andrenidæ only two genera, *Angochlora* and *Agapostemon* are very brilliant, although some *Halicti* show some.

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* Although the Chrysididæ are classed with the bees, etc., they are not *aculeata*. Mr. Ashmead has kindly stated their systematic position to me as follows: "Although they are certainly *Hymenoptera monotrocha* and belong to the section with the bees, strictly speaking they can hardly be called true *Aculeata*, being, as Latreille observes, 'sur les confins des deux sections,' and were formerly classed with the *Terebrantia*. I agree with Westwood in considering them more closely allied to certain Proctotrupids, i.e., the Dryninæ ane Bethylinæ, than to the bees. If I had the time I could point out some very remarkable structural similarities." (*in litt.* Feb. 5, 1890)

"I am of course speaking of the insects found in N. America, as I am not very familiar with exotic or oriental forms.

"In family Vespidæ there are none; in Eumenidæ none; in Masaridæ none; in Crabronidæ only a few species in the genera *Trypoxylon* and *Oxybelus* show any and then usually confined to the pubescence; in Pemphredonidæ all are black or ornate with white and yellow; in Mellinidæ and Mimesidæ the same, although sometimes the pubescence is silvery or golden; in the Philanthidæ they are highly colored, but are not metallic, or but seldom show any metallic splendor; in Nyssonidæ and Bembicidæ the same; in the Larridæ some of the forms do, but strictly speaking they are not brilliant, and the metallic coloring is usually confined to the vestiture; the family Ampulicidæ has but one species in America, and that is dark colored. In the family Sphecidæ a large percentage show metallic colors, but only a few are very brilliant; in Pompilidæ only a few; the Sapygidæ are highly colored, but not metallic; in the Scoliidæ only a few forms, while in the Mutillidæ and Formicidæ none that I know of.

"So now you have the showing, the North American *Aculeata* make, in a nutshell (W. H. Ashmead *in litt.* Feb. 5, 1890)."

From which summary it becomes evident that, as a whole, the *aculeata* do not compare in brilliancy with very many of the non-stinging kinds. Nor is it clear that the stings altogether protect the bees and wasps from birds, or render them inedible. Dr. Wallace remarks (Darwinism, p. 239): "We see that even the powerful stings of bees and wasps only protect them against some enemies, since a tribe of birds, the bee-eaters, have been developed to feed upon them, and some frogs and lizards do so occasionally."

Dr. Riley records that sparrows (*Passer domesticus*) feed on *Halictus*, *Tiphia*, *Myzine* and ants. In no less than *thirty* cases was *Myzine sexcincta* found in the sparrow's stomachs, and this is a brightly marked (though not metallic) species, which, perhaps, theoretically should not have been eaten. I have found ants in the stomach of *Sialia arctica*, shot in Custer County, Col. The stomach of a woodpecker, shot by Rev. A. Wright in the same locality, contained a great number of ants; the majority apparently *Formica fusca*, with a few *F. integra*. In England the tom-tit (*Parus*) is known to wage constant war against *Bombus*.

So clearly, the *Aculeata* do not always escape! *Myzine sexcincta* is marked pretty much as most of the species of *Vespa*, *Odynerus* and *Crabro*, and yet is not protected. So here is the great class of yellow markings on black, apparently useless for warning purposes. The humming and buzzing of bees may likely frighten their enemies in some cases. Certainly it scares those of the genus *Homo* in most cases. But that has nothing to do with the colors.

There seems to be a tendency for insects which are carnivorous in their early stages to be metallic, but there are very many exceptions to this rule. Thus in Coleoptera the Carabidæ are often metallic, but so are many of the plant-feeding Chrysomelidæ and several of the Curculionidæ, while many carnivorous beetles are dull. In Diptera, the blow-fly, *Lucilia*, is metallic. In Hymenoptera, the parasitic Chalcididæ are mostly metallic, while the plant-feeding Cynipidæ are brown, black or yellowish. And so on through numerous examples.

So much then on the colors of the stinging and stingless Hymenoptera. The question remains, what are they for? Why do they exist?

———o———

# COLLECTING BY LAMPLIGHT.

BY A. S. VAN WINKLE.

No doubt many entomologists have spent night after night collecting different species of moths which can only be taken after dark. Many a time have I spent night after night, alone, down in the dark forest bordering the Mississippi in collecting on very warm, dark and damp nights when the harvest would be very productive, as many different species of Bombycidæ, Noctuidæ, Geometridæ, Pyralidæ, Tortricidæ, Tineidæ and Pterophoridæ would be captured, while on other nights I would be doomed to disappointment for after being up almost night I would collect little or nothing.

When one reads Dr. Wallace's delightful work entitled, "The Malay Archipelago," giving his experience of collecting in the eastern Tropics, especially the part referring to the subject of moth collecting at night, he cannot fail to appreciate its importance. Knowing full well that the readers of ENTOMOLOGICAL

NEWS, especially those who have not had the pleasure of reading Dr. Wallace's work will be interested in it, and that ENTOMOLOGICAL NEWS is chiefly devoted to this kind of literature I take pleasure in quoting the following passage: "While collecting on the island of Borneo what occupied me most was the great abundance of moths which, on certain occasions, I was able to capture. As during the whole eight years' wanderings in the East I never found another spot where these insects were at all plentiful, it will be interesting to state the exact conditions under which I here obtained them. On the one side of the cottage there was a verandah looking down the whole side of the mountain, and to its summit on the right all densely clothed with forest. The boarded sides of the cottage were whitewashed and the roof of the verandah was low and whitewashed. As soon as it became dark I placed my lamp on the table against the wall and with pins, insect-forceps, net and collecting-boxes by my side, sat down with a book. Sometimes during the whole evening only a solitary moth would visit me, while on other nights they would pour in in a continual stream, keeping me hard at work catching and pinning till past midnight, as they came literally by thousands. These good nights were very few. During the four weeks that I spent altogether on the hill I only had four really good nights, and these were always rainy, and the best of them soaking wet, but wet, rainy nights, were not always good, for a rainy moonlight night produced next to nothing. All the chief tribes of moths were represented, and the beauty and variety of the species was very great. On good nights I was able to capture from a hundred to two nundred and fifty moths, and these comprised on each occasion from half to two-thirds that number of distinct species. Some of them would settle on the wall, some on the table, while many would fly up to the roof and gave me a chase all over the verandah before I could secure them.

(To be continued.)

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NOTE.—By a slip of the pen I quoted Mr. Blanchard incorrectly in the April NEWS. *Corymbites crassus* is the female of *divaricatus*, and *not* as I there stated of *inflatus*.—G. H. HORN.

# ELEMENTARY ENTOMOLOGY.

## FIRST PAPER—WHAT IS AN INSECT?

While the study of Entomology, or the knowledge of Insects, is one of the most fascinating of pursuits, it is not a matter of wonder that many have been deterred from undertaking it, because of the difficulties with which it is hedged about, and the array of strange, technical words with which it is surrounded. The purpose of these articles is, therefore, to endeavor to popularize the study by explaining, in as simple a manner as possible, the various technical terms which, of necessity, must be employed by scientific writers.

The word Insect is, as a rule, very loosely employed by those who have not studied the subject. Even scientific usage of the word has varied, and Insects are sometimes regarded as equivalent to the group described later on in this paper under the name of Tracheata. In this series the word Insect is used in a restricted sense, and does not include such animals as spiders, centipedes and mites, and yet we would not exclude from the pages of this journal information about such creatures, since we hope to give our readers some very interesting notes on spiders (as well as on ants), from the pen of our fellow-member, the Rev. Dr. McCook, who has made the study of their habits a specialty, and who knows so well how to interest his readers.

Insects may be described as being (1) joint-footed animals, breathing by tracheæ; (2) having the body of the adult divided into three distinct portions,—head, thorax and abdomen; (3) having in the perfect or imago state, one pair of antennæ attached to the head.

(1) The joint-footed animals, or technically the *Arthropoda* (which is the Greek equivalent), are formed on a different plan from the other branches of the animal kingdom. Their bodies are composed of a series of rings (or *segments*), within which are the vital apparatus and muscles. It is true that many of the Worms have their bodies segmented, but no Worms have jointed feet. A vast number of animals are included within the *Arthropoda*,—not only the *Insecta*, but also the *Arachnida* (spiders, scorpions, etc.), the *Myriapoda* (centipedes, millipedes, etc.), certain curious animals known as *Onychophora*, and the *Crustacea*

(crabs, lobsters, shrimps, etc.). It is necessary, therefore, to find some differences which will distinguish the Insects from all other Arthropods.* One of these is the breathing by *tracheæ*, which are tubes, composed of thin membranes kept open by a fine, but stiff, wiry thread twisted spirally throughout the whole course of the tubes. The tracheæ have their external openings, called *spiracles* or *stigmata*, along the sides of the body. From the spiracles the tracheæ pass inwards and ramify in all directions throughout the body. The Crustacea breathe by gills, and hence form a division of the Arthropods called *Branchiata* (from the Greek work *brangchia*, gills). All other Arthropods than the crustacea breathe by tracheæ, or similar structures, and hence form the division *Tracheata*.

(2) The body of an adult insect is divided into *three regions*,—*head*, *thorax* and *abdomen*. In the Crustacea and Arachnida, there are, as a rule, *two* regions, the united head and thorax (*cephalo-thorax*), and the abdomen. In the Onychophorans and Myriapods the body is worm-like, and can hardly be said to be divided into regions (although, of course, segmented); the head, however, is distinct.

(3) Insects, when they have attained their imago or perfect form, have one pair of *antennæ* (or "feelers") attached to the head, three pairs of *legs* which are restricted to the thorax, and usually two pairs of *wings*, also attached to the thorax. The Arachnida have no true antennæ, but have four pairs of legs attached to the thoracic part of the cephalo-thorax. The Myriapoda and Onychophora have one pair of antennæ and numerous pairs of legs. The Crustacea have two pairs of antennæ and usually five or more pairs of legs to the thoracic part of the cephalo-thorax, and often some abdominal legs. No other Arthropoda than the Insecta have wings, and even some Insects are destitute of them during their entire life.

With respect to the states or forms assumed in the course of their lives, Insects may be grouped into three divisions :

1. Insects which pass through four states, viz., (1) the *Egg*, (2) the *Larva* (caterpillar, maggot, grub, or "worm"†), (3) the *Pupa* (chrysalis), usually a quiescent state, and (4) the *Imago* (perfect insect).

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* The characters given in this paper for the classes of Arthropoda are mainly those used in Claus and Sedgwick's excellent Text Book of Zoology.

† Such as the "Tomato-worm," "Grape-vine worm," and similar plant-feeders.

2. Insects which pass through three states, viz., (1) the *Egg*, (2) the *Nymph* and (3) the *Imago*.

3. Insects which pass through two states, viz., (1) the *Egg*, and (2) the *Larva-form*.

1. Insects passing through four such states differ very much when in their larval state from the form which they possess when in their imago state, and hence are said to undergo a *complete* metamorphosis or transformation. Such are Bees, Butterflies, Beetles, etc. Very frequently the pupa is enclosed in a *cocoon* of silk, earth, chips, or other substance.

2. In other insects there is no distinction between the larval and pupal states, and the larva much resembles the imago, although differing noticeably by the wings being not yet developed as organs of flight. Such insects pass through an *incomplete* transformation. Lately the word *Nymph* has been used to denote that state of existence in such insects between the egg and the imago, although formerly it was synonymous with *pupa*. Insects with an incomplete transformation are Grasshoppers, Dragflies, etc.

3. These insects undergo no transformatton, the larval form being retained to the end of their existence. Such are Fish-moths and Spring-tails.

The growth of an insect is completed in its larval or its nymph state, and however long an insect may live, it never increases in size after it has attained its perfect form. The modes of passing through the successive changes of form vary much in the different orders of insects, and are always full of interest to careful observers. These changes will be referred to in future articles on the various orders.

The principal characters which distinguish the Insecta from the other classes of Arthropoda may be tabulated as follows (These characters apply only to adult individuals):

Arthropoda.—Animals with a segmented body and jointed segmental appendages.

**A.**—Breathing by gills (Division *Branchiata*.)

Body usually divided into a cephalo-thorax and an abdomen; two pairs of antennæ . . . . . . . Class I, **Crustacea.**

**B.**—Breathing by tracheæ (Division *Tracheata*.)

1. No true antennæ (Subdivision *Chelicerota*.)

Body usually divided into a cephalo-thorax and an abdomen; four pairs of thoracic feet; no abdominal feet. Class II, **Arachnida.**

2. With one pair of antennæ (Subdivision *Antennata*).
  a. Body not divided into regions; feet fairly numerous,
    Class III, **Onychophora** (or **Prototracheata**).
    Class IV, **Myriapoda.**
  b. Body divided into head, thorax and abdomen; six feet, restricted to thorax.
    Usually with two pairs of wings, Class V. **Insecta** (or **Hexapoda**).

P. P. C.

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## Additional Notes on some North American Odonata.

BY PHILIP P. CALVERT.

On Jan. 28, 1890, were published the separate copies of my paper entitled, "Notes on some North American Odonata, with descriptions of three new species (Trans. Amer. Ent. Soc. xvii, pp. 33—40, 1 pl.)." During the next two days I sent copies of my paper to various students of the Odonata. One of the new species I described under the name of *Leucorhinia Hageni*, figuring the inferior appendage and hamule of the male, and the vulvar lamina of the female. Under date of Feb. 2, 1890, Dr. Hagen wrote to me acknowledging the receipt of my paper, and stated that "your *Hageni* is, I believe, *L. hudsonica* Selys." He also sent me drawings of the male hamule and female valvules of *hudsonica*. I can now see no reason for believing *Hageni* to be specifically distinct.

Since the publication of my paper, Mr. Charles W. Johnson has kindly looked over my Floridan types of *Lepthemis gravida*. He tells me that he has collected this species flying over the salt marshes near St. Augustine, Fla. In the habitat given originally (l. c. p. 36) for this species, I have misspelled Ponto Rasso for Punta Rassa.

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Students of the Odonata must rejoice in the recent publication of two parts of Dr. Hagen's new "Synopsis of the Odonata of North America," published in "Psyche" vol. v, Nos. 160 and 166, and dealing with the genera *Calopteryx* and *Anax*. I have recently compared the specimens of *Calopteryx* in my colleetion and that of the American Entomological Society, with Dr. Hagen's paper on that genus. In both collections *Calopteryx* is but poorly represented, and but few new facts were ascertained from the comparison.

Five North American species are recognized in the paper referred to, viz.: *C. angustipennis, amata, dimidiata* (with race *apicalis*), *æquabilis* (with races *hudsonica* and *yakima*) and *maculata*, Of these I have seen *dimidiata* (and r. *apicalis*), *æquabilis* and *maculata*.

Dr. Hagen states ("Psyche," v, p. 242) that "The genus *Calopteryx* largely represented in the northern boreal and temperate zone nowhere passes to the south beyond the 30th degree." I possess a male *dimidiata*, formerly in the collection of Prof. P. R. Uhler, of Baltimore; when Prof. Uhler gave this specimen to me it bore (and still bears) the label "Calopteryx, Honduras." Honduras, including that part under British rule, extends from about the 18th to the 13th parallel of North latitude. The most southern locality in all America for any species of *Calopteryx*, as given by Dr. Hagen, is Florida.

In the Am. Ent. Soc. collection are two males of *apicalis* from Delaware, a new locality. In the same collection are two females, one certainly, the other probably from Delaware; I think that they also belong to *apicalis*. The measurements of these females are: Total length 40—40.5 mm.; abdomen, 31.5—32.5 mm.; anterior wing, 30 mm.; posterior, 29 mm.

Of *æquabilis* I possess one male and one female, both taken by Mr. Harry L. Walker at Belvidere, Boone County, Ill., June 29, 1888, "on the bank of a little stream." Both agree very well with Dr. Hagen's description, except that the wings of the female are hardly smoky at the apex.

For *maculata* I add a new locality, Tama County, Iowa; two males and one female taken June 21, 28, 29, 1889, by Miss Alda M. Sharp.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

IDENTIFICATION OF INSECTS (IMAGOS) FOR SUBSCRIBERS.—Specimens will be named under the following conditions:

1st.—The number of specimens to be limited to twelve (12) for each sending.

2d.—The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society.

3d.—Each specimen must have a number attached so that the identifications may be announced accordingly.

Such identifications as can be given will be published according to number, in the issues of the NEWS. Address packages to *Entomological News*, Acad. Nat. Sci., Logan Square, Philadelphia, Pa.

NOTES FROM COLORADO.—*Timothy bugs.* On Aug. 21, 1889, I took ♂ and ♀ Pentatomids on Timothy-grass (*Phleum pratense*) by Willow Creek, Custer County, Col. They are identified by Mr. Ashmead as *Homæmus bijugis* Uhler, which is probably a variety of *H. aeneifrons* Say.

*Yucca-insects.* One day I examined the flowers of *Yucca angustifolia* at West Cliff for insects, having at the time just read some articles on the *Yucca* controversy. I found many Aphides, and some ants, possibly *Formica ciliata* Mayr, and on the outside of one of the flowers a bee, *Nomia nortoni* Cress. The Hymenoptera were kindly examined by Mr. Ashmead.

*Cænonympha eggs.* On June 26, 1889, I caught a ♀ *Cænonympha ochracea* near Texas Creek, Custer County. From its abdomen I obtained an egg by pressure; it was pale yellow, globular and large for the size of the insect. It proved infertile.—T. D. A. COCKERELL.

J. W. TUTT—Rayleigh Villa, Westcombe Park, London, E. England—is engaged on a Monograph of the varieties of NOCTUÆ occurring in Great Britain, with descriptions, etc., of the varieties of these species occurring in other countries, and would be pleased to hear from the readers of ENTOMOLOGICAL NEWS as to any striking forms of variation that may come under their notice.

THE GLANVILLE FRITLARY.—"This butterfly took its name from the ingenious Lady Glanville, whose memory liked to have suffered for her curiosity. Some relations that were disappointed by her will, attempted to set it aside by acts of lunacy; for they suggested that none but those who were deprived of their senses, would go in pursuit of butterflies. Her relations and legatees cited Sir Hans Sloane and Mr. Ray to support her character; the last gentleman went to Exeter, and on the trial satisfied the judge and jury of the lady's laudable inquiry into the wonderful works of the Creation; and established her will.—*Harris' Aurelian* 1766.

"I RECOLLECT some ten or twelve years ago, one Sunday, whilst collecting in a neglected field, near Bernard's dam, that the proprietor of the ground, or of some neighboring territory, a pleasant, hale old gentleman, came down in his shirt sleaves to gratify his curiosity in regard to my doings. He first approached with the proper caution due to nearing an equivocal animal, but assuring himself by the placidity of my countenance, doubtless, that there was no apparent danger to be dreaded, he approached me, and in the Pennsylvania German dialect asked what I was doing. I showed him my collecting-box and its contents, my net, etc., and as at that moment a large female of the *Ephestion* butterfly flew near, I joined example to precept by capturing and killing and pinning it in my collecting-box in his presence. The most difficult part to make the old gentleman comprehend, was what the things could be used for after they were caught. I attempted an explanation. Whether I was successful in doing so to his satisfaction I still doubt, however, he seemed pleased, and by way of explanation said, as he departed, 'Ich haab dich gasayn for ein bar Suntaag here und durt so rum springe un ich hab gaydenkt du waarst so ein kaerl wo nicht gons recht in kopf war, aber.'[*] Here he paused and looked puzzled, and I fear to this day the worthy old husbandman (bless his kindly face) is still, if living, in a state of suspense as regards my being responsible for my actions before the Lord and my fellow-man."

THE EXPEDITION sent out by the Academy has been heard from several times; they are doing good work, and are all well. The last report says, "We have just arrived at Vera Cruz after a very enjoyable and interesting time in Yucatan. Expect to go straight to Orizaba. This morning, early, we saw the snow-clad peak of Orizaba in the distance."

WHILE watching a luna moth just after it emerged from the cocoon, I noticed that the small and unexpanded wings were light yellow in color, and I thought it would be abnormal in coloration, but at the base of the wing I saw a small area, which was of a beautiful light green, and as the moth gradually expanded the wings this was distributed through them, making the color normal. This is another proof of the fact that the wings are expanded by the moth pumping a fluid into them when they are soft and elastic.--H. SKINNER.

THE fine collection of insects made by the late Stephen Calverley has been presented to the Brooklyn Institute by his son.

PLANS FOR EXTERMINATING MOSQUITOES.—Mrs. Eugene M. Aaron, of 1832 Pine Street, has been awarded the first prize offered by Dr. Robert H. Lamborn, of New York City, for the best essay on the extermination of mosquitoes, especially by Dragon-flies. The second and third prizes have ceen divided equally between Mr Archibald C. Weeks, 120 Broadway, New York, and Mr. William Beutenmuller, 132 East Seventy-sixth Street, New York. It is understood that Dr. Lamborn will publish the essays The judges who made the awards were the Rev. Dr. Henry C. McCook, of the Academy of Natural Sciences of Philadelphia, and Prof J. S Newberry, of the School of Mines, Columbia College, New York.

Mr. J. D. EVANS, in the "Ottawa Naturalist," vol. iii, No. 4, reports *Erebia epipsodea* as being found at Sudbury on the Canadian Pacific Railroad.

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[*] I have seen you running around here for the last couple of Sundays and I thought you were one of those fellows who were not quite right in the upper story but'——

# Entomological Literature.

DIE ZWEIFLUGLER DES KAISERLICHEN MUSEUMS ZU WIEN, IV.—Vorarbeiten zu einer Monographie des Muscaria Schizometopa (exclusive Anthomyidæ) Pars I. Von Prof. Dr. Friedrich Brauer, W. M. K. Akad., und J. Edl. v. Bergenstamm (Mit 11 Tafeln). Denkschr. d. math.-wissens. Classe d. k. Akad. d. Wissensch. Bd. lvi, pp. 1—112, pls. i—xi, 4to. 1889. —Only he who has endeavored to find his way in the devious labyrinth of the calyptrate Muscidæ can appreciate this important and valuable paper, the most important that has ever appeared on the subject, and one that will mark a new epoch in our knowledge of the group. To give even an outline of its contents is impracticable here, nor would I feel at all competent for the task, were my opportunities unlimited. A paper that introduces fifty new families and one hundred and fifty new genera would appall any ordinary critic, and I know only enough about the insects to appreciate the labor and research the paper has cost. The authors, following out Prof. Brauer's previously published taxonomic views, present an almost entirely new classification of the group, which is coextensive with what has been generally known as the Muscidæ calyptratæ, with the inclusion of the Oestridæ. "Families," groups and genera are defined, and three hundred and ten admirable lithograph figures, graphically illustrate most of the genera. All the known genera are not included; only those of which the authors had definite or artoptic knowledge; still, there cannot be many wanting, and the work must remain as the *sine qua non* of all dipterologists who have anything to do with these flies. The work is nothing if not iconoclastic, and I do not think will, and ought not to, obtain the concurrence of entomologists in all respects. The authors' conception of the genus is, I think, not tenable, and there is a great lack of uniformity in the group names. But, whatever the differences may be, all will unite in their appreciation of the great value of this *bahubrechend work*.—S. W. WILLISTON.

PROCEEDINGS ACADEMY NATURAL SCIENCES PHILADELPHIA, Part III, 1889.—Antennæ of Coleoptera, by Geo. H. Horn, M. D. On a new species of Spider of the genus Dinopis from the Southern United States by Geo. Marx, M. D.

A SEASON'S WORK AMONG THE ENEMIES OF THE HORTICULTURIST, by Clarence M. Weed. The enemies referred to in this paper are of two kinds: insects and fungi. The insects treated of are the Rhubarb Snout Beetle, Imported Currant Worm, Plum Curculio, Striped Cucumber Beetle, Cherry Tree Slug and Strawberry Root Louse. The appropriate remedies are given to destroy each of these pests.

THE ENTOMOLOGIST, London, March, 1890.—The Evolution of Insect-galls by T. D. A. Cockerell. Notes on the Economy of *Retinia resinella*, R. Adkin. *Rhopalocera* at Digne, Mrs. Nicholl. One the Phylogenetic significance of the wing-markings in certain genenera of the Nymphalidæ, F. A. Dixey. New species of Lepidoptera from China, J. H. Leech. Descriptions of new species of Phytophagous Coleoptera received by Mr. J. H. Leech from Chang-Yang, China, Martin Jacoby. Descriptions of the Homopterous family Cicadidæ, W. L. Distant. Notes on *Hybocampa milhauseri*, T. A. Chapman. Faroe Islands, Rev. Dr. Walker. Entomological Notes, Captures, etc., and doings of societies, etc., complete the number.

ANNALS AND MAGAZINE OF NATURAL HISTORY, vol. v, No. 27, London. —Descriptions of new species of Lepidoptera (Heterocera) from Central America, Herbert Druce. The new species mentioned in the above paper are figured in the Biologia Centrali-Americana. Descriptions of two new Central American Buprestidæ, C. O. Waterhouse. Description of a new *Papilio* from the West coast of Africa, H. Grose Smith (*Papilion harpagon*). On the constitution of the body in the Blattidæ, E. Haase. Description of a new genus of the Homopterous family Cicadidæ, W. L. Distant.

BIOLOGIA CENTRALI-AMERICANA, Part LXXXI, December, 1889.—(Received March, 1890). Contains ARACHNID ARANEIDEA, O. Pickard Cambridge, pp. 49—56, pl. 5, thirteen colored figures. COLEOPTERA, vol. ii, pt. 2. H. W. Bates, pp. 385—416, pl. 24, twenty-five colored figures. COLEOPTERA vol. iii, pt. 1, C. O. Waterhouse, pp. 169—193. COLEOPTERA vol. iv, pt. 2, G. C. Champion, pp. 103—120, pl. 5, twenty-five colored figures. LEPIDOPTERA, HETEROCERA, H. Druce, pp. 337—344, plate 5, twenty-fiva colored figures. RHYNCHOTA HETEROPTERA W. L. Distant, pp. 321—328, pl. 30, twenty-five colored figures. Quite a number of new species are described and handsomely illustrated.

BIOLOGIA CENTRALI-AMERICANA Part LXXXII, January, 1890 (Rec'd March, 1890).—COLEOPTERA vol. ii, part 2, H. W. Bates, pp. 417—432. COLEGPTERA vol. iv, part 2, G. C. Champion, pp. 121—160, plates 6 and 7, fifty-one colored figures. LEPIDOPTERA HETEROCERA vol. i, H. Druce, pp. 345—368, plate 31, fifteen colored figures. DIPTERA vol. ii, F. M. van der Wulp, pp. 41—56.

The ENTOMOLOGIST'S MONTHLY MAGAZINE (London) March, 1890.—Synopsis of the British ORTHOPTERA (continued), Eland Shaw. COLEOPTERA in Norfolk, James Edwards. .Descriptions of some new species of South American Halticidæ of the group ŒDIPODES (continued), Martin Jacoby. Descriptions of four new species of the genus *Castnia* from South America, Herbert Druce. Notes on British *Tortrices* (continued), C. G. Barrett. Notes on the COLEOPTERA and LEPIDOPTERA (*Rhopaloc.* of Norway, G. C. Champion (with list of Norwegian butterflies by W. M Schöpen). Notes on British and Exotic Coccidæ. J. W. Douglas. HEMIPTERA HETEROPTERA at Dover and its vicinity, G. C. Hall. *Stenamm*

*Westwoodii* at Maidstone, G. E. Frisby. *Cis cis bilamellatus* breeding in captivity, Rev. Theodore Wood. *Harpalus obscurus* H. R. Tottenham. Casual captures of COLEOPTERA, J. J. Walker. COLEOPERA in the North of Ireland, Rev. W. F. Johnson. *Oberea oculata*, Rev. C. Fowler. *Mycterus curculionides* from near Oxford, Id. On the larva of *Glæa spadicea* and *G. vaccinii*, T. A. Chapman, M. D. A point concerning hybridization, H. W. Vivian. Some MICRO-LEPIDOPTERA of the Chalk Hills near Reading, W. Holland. *Aciptilia paludum* in the New Forest, Id. *Mecyna polygonalis* Tr. in New Zealand, E. Meyrick. *Nepticula pyri*, a species new to Britain, J. H. Wood. *Scoparia basistrigalis* as distinct from *S. ambigualis* G. T. Porritt. Identity of *Dianthœcia carpophaga* and *D. capsophila*, W. F. H. Blandford. *Drepanopteryx phalænoides* in Durham, Amos Mitchell.

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# Doings of Societies.

ENTOMOLOGIYAL SECTION ACADEMY NATURAL SCIENCES OF PHILADELPHIA, March 27, 1890.—Members present: Messrs. Martindale, Ridings, Skinner, Liebeck, Seeber, Castle, Calvert, Westcott, Mr. Mengel and Mr. Fox, visitors. Dr. Geo. H. Horn, Director, in the chair. Verbal communications being in order, Dr. Horn called attention to a box containing *Cercyon* and allied genera, with all the known species represented. He exhibited plates showing anatomical characteristics of *Cercyon*. The shape of the meso-sternum was considered in relation to classification. A lighter colored region of the meta-sternum is defined or not according to circumstances. The genus *Cryptopleurum* has a well defined line or extension of the meta-sternum, which has value as a basis of comparison. In *Cercyon* the pro-sternum is a carina, and in some genera a broad plate. Points in the comparative anatomy of the genera were considered at length. He further stated that the proper way to study genera is by a comparison of the gradations of anatomical features. Mr. Calvert spoke of the list of dragon-flies collected at Manchester, Me., by Miss Wadsworth, forty-three species being enumerated, which is a very creditable showing. The number of species observed in comparison to other places is large, as in Great Britain only forty-six species are enumerated according to McLachlan. Mr. Calvert estimated the species of this locality (Philadelphia) as fifty. *Epitheca Walshii* is the rarest species in the Maine list, only four ♂ and one ♀ specimens being known. Dr. Hagen has lately published a synopsis of the dragon-flies of North America, to which Mr. Calvert called attention. The following specimens were donated to the cabinet: *Rhodites fusiformans* Ckl., four specimens; *Syntomaspis monticola* Ashm., one specimen. Galls of *Trypeta bigeloviæ* Ckl. Galls of

*Rhodites rosæfoliæ*, Ckl. (the flies have since emerged), all from Mr. Cockerell, West Cliff, Colorado. *Pimpla grapholithæ* Cress., presented by Dr. John Hamilton.

ENTOMOLOGICAL SOCIETY OF WASHINGTON.—March 6, 1890. Mr. Schwarz exhibited and remarked upon the following species of Coleoptera, which are new to the fauna of North America: *Lathridius* (*Coninomus*) *nodifer* Westwood; *Actinopteryx fucicola* Allibert; *Arrhipis Laneri* Guerin and *Probatius umbratilis* Duval. He also showed specimens of *Temnochila Hubbardi* Léveilleé, and *Teretriosoma Hornii* Lewis, recently described in European journals from the semi-tropical region of Florida. He finally drew attention to Dr. Horn's recent Revision of the North American species of *Ochthebius*, and spoke of the geographical distribution of these aquatic beetles. Discussion followed by various members.

The Secretary presented a note on a Dipterous larva infesting the seeds of Xanthium. He had found that these larvæ at Manhattan, Kansas and during the past winter in the District. Drawings were exhibited illustrating the larva and the nature of its work.

The Secretary also presented a short note on the food-habits of *Psiloptera drummondi*.

These notes were discussed by Schwarz, Townsend and Howard.

Mr. Townsend read a paper entitled, "Notes on Acridiidæ in Michigan," which related more particularly to dates of appearance and habits.

C. L. MARLATT,

*Recording Secretary.*

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## ERRATA.

Page 56, line 10 from top, for exista *read* exusta.
" 58, " 6 from bottom, for Sagmache, *read* Sagnache.
" 60, " 5 from top, for Amstat, *read* Austat.
" 61, " 15 from top, for *Dyctidæ* read *Dyctidea*.
" 61, " 18 from top, for *Tilicen* read *Tibicen*.
" 64, " 6 from top, for *fusciformans* read *fusiformans*.
" 64, " 8 from top, for *Cemthophilus* read *Centhophilus*.

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# ENTOMOLOGICAL NEWS

AND

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## WINTER COLLECTING IN FLORIDA.

BY ANNIE TRUMBULL SLOSSON.

I reached Florida this year on January 25th. Butterflies were flying at that season in Jacksonville, and I saw from my window *Callidryas eubule*, *Terias delia*, *Limenitis disippus*, *Danais archippus*, and some of the Hesperidæ. At night, though the weather was cool, *Agrotis incivis* and *A. malefida* came to the piazza lights by the dozen. On the 27th, at Sanford, about one hundred and twenty-five miles farther south, several moths came to the rather dimly-lighted windows, among them the Southern form of *Hyperchiria io*, Dr. Strecker's *lilith*—*Eudioptis hyalinata* and *Agrotis incivis*. On the 28th we went to Punta Gorda (Charlotte Harbor) and remained there until March. There had been no rain there for some four or five months, consequently vegetation was backward, and there were very few flowers, but insects were plentiful. During the first few days after my arrival I saw *P. cresphontes*, *P. palamedes*, *P. ajax*, *P. troilus*, *P. turnus*, *D. archippus*, *L. disippus*, *L. eros*, *Pieris monuste*, *Agraulis vanillæ*, *Terias delia*, *T. lisa*, *Callidryas eubule* and *Junonia cœnia*, besides numerous Hesperidæ. A few days later, about the few orange blossoms which opened in spite of the drought, we found beautiful specimens of *Erycides batabano*. They fluttered about the fragrant flowers like humming birds, their wings glancing in the sunlight with touches of sapphire and emerald. With them, and sipping from the same blossoms, we took three specimens of an *Alypia* new to me, and which I cannot place till I have access to my books. Along the shore, just inside the thicket of mangroves, are long flat stretches of sand, often submerged and always wet. On these grow little but samphire (*Salicornia ambigua*) *Iresine vermicularis* and such marine plants with fleshy, succulent leaves and insignificant flowers. But over these in the hot sunshine at midday were always flitting tiny *Lycænas* and *Theclas*. Here I took the little bronzy *L. isophthalma*, *L. filenus*, *L. theonus* (a lovely little species, the female with wings almost white), *Thecla pœas*, *T. M-album* and *T. melinus* (this last name is given me by Dr. Henry Skinner). There were so very few blossoms that I knew nearly every plant which bloomed, and could visit each one as I made my collecting rounds. One large thistle (*C. horridulum*) with several heads of pale yellow flowers was always a favorite spot for insects, and wherever a plant of the ugly fireweed (*Erechthites*) lifted its greenish, commonplace heads of flowers they were surrounded by little gay-winged lovers. Seeing at a distance one day what looked like a patch of large white blossoms I went towards it only to find a mat of the little creeping hyssop (*Herpestis monniera*) with tiny lavender flowers covered with the Southern cabbage butterfly (*P. monuste*). There were at least twenty on a patch not two feet square. Hesperidæ abounded, skipping jerkily about the grounds of the hotel and over the palmetto scrub; *Pamphila brettus*, *P. fusca*, *P. phylæus* (Dr. Skinner gives me these names), *P. arpa*, *P. maculata* and several others yet unnamed. *Calephelis cænius* was also abundant. The evenings were generally windy and cool, not favorable conditions for moth hunting, but we met with comparative success. At light we captured many fine specimens, some still unidentified. Here we took *Hyparpax auricinctus* (I think that this is the name given last year by Mr. Graef, but I have no book for reference), *Varina ornata* Neumoegen, *Litoprosopus futilis* G. & R., *Byssodes obrussata* Gr., *Lepiodes scolopacinaria* Guen., *Dilophonota obscura* Fab., *Ellema coniferarum* A. & S., *Lagoa pyxidifera* A. & S., *Platæceticus gloveri* Pack., *Trama hinna* Gey., *Phurys vinculum* Guen., *Euhalisidota longa* Gr. and many other species. The true collector is always sanguine, and I have great hopes concerning my unnamed specimens. One large, oddly-marked sphinx fills me with visions of a new genus as well as species, and I have already selected its name. There is also a strange and beautiful moth, apparently one of the Zygænidæ, unlike anything I have seen or of which I have read. I found feeding upon the tomato vines in the hotel garden many larvæ of *Phlegethontius celeus*, and upon the sweet potato and *Ipomœa pes-capræ*, larvæ of *P. cingulata*. These were all full grown; I placed several of them with their food-plant in a box of earth where they soon buried themselves and transformed, but though they have been in the pupa state nearly five weeks no moth has yet emerged. I also found feeding upon mangrove (*Rhizophora mangle*) and upon *Conocarpus erecta* young larvæ of *Hyperchiria io* Fab. I have reared them and they are just spinning themselves up among some leaves. They do not differ in any respect, as far as I can see, from the typical form, and I am anxious to see if they will develop into var. *lilith* Strecker.

(To be continued.)

## Aculeate Hymenoptera new to Pennsylvania and New Jersey.

BY WILLIAM J. FOX.

The following list of Aculeate Hymenoptera may prove of interest to some readers of the NEWS, as it adds a few more species to the fauna of Pennsylvania and New Jersey. The majority of them were collected at Westville, N. J., several miles below Philadelphia, during 1889. The localities in parentheses signify where the species was recorded from before publication of this article.

*Mutilla ornativentris* Cress. Several specimens, Westville, N. J., 1889 (Southern and Western States).

*Mutilla dubitata* Sm. Several specimens taken with the preceding species (Florida, Georgia, Colorado).

*Mutilla thoracica* Blake. One specimen of this small species was captured Oct. 29, 1889 (New York).

*Sphærophthalma cypris* Blake. This species was moderately common at Westville during the summer of 1889 (Georgia).

*Sphærophthalma canadensis* Blake. About a dozen specimens were taken in the same locality (Canada).

*Tachytes mandibularis* Patton. Taken at Westville, N. J., 1889. One specimen (Connecticut).

*Philanthus Sanborni* Cress. Westville, N. J., August, 1889. One female (Massachusetts).

*Crabro trapezoideus* Pack. One male, Fairmount Park, Philadelphia, September, 1889 (Illinois).

*Thyreopus cingulatus* Pack. Westville, N. J., Oct. 29, 1889. One female (Illinois).

*Anacrabro occellatus* Pack. Three specimens, one male and two females, Westville, N. J., July and August, 1889 (Mass., Ill.).

*Vespa occidentalis* Cress. One specimen, Fairmount Park, Philadelphia, September, 1889. Flying in company with *V. germanica*, *vidua* and *diabolica* (Nevada, New Mexico).

*Nomada texana* Cress. Two specimens, both females, Camden, N. J., 1889 (Texas).

*Nomada lepida* Cress. Three specimens (males), Franklinville, Pa., April 20, 1890. Flying over and alighting on dry sunny paths in the woods (Illinois, Colorado, Texas).

*Mellissodes compta* Cress. One female of this handsome species taken in Fairmount Park, Philadelphia, Sept., 1889 (Ga.).

*Apathus variabilis* Cress. Gloucester, N. J., August?, 1889. One specimen (Texas).

All these species were compared with those in the collection of the American Entomological Society, which contains the *types* of nearly all the insects mentioned.

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# GEOGRAPHICAL VARIATION.

BY HENRY SKINNER, M. D.

Dr. John Hamilton, in a recent paper (Trans. Am. Ent. Soc. vol. xvi, p. 88), gives a list of the Coleoptera common to North America, Northern Asia and Europe, and Mr. Cockerell (Entomologist's Record and Journal of Variation vol. i, No. 1, p. 9) a list of the "American Species of Lepidoptera Representative of European;" also on page 13 of same work, "American Varieties of British Species (Lepidoptera)." These papers are very interesting and instructive, and suggest many other lines of investigation of a similar character. When the Lepidoptera have been more exhaustively studied after the plan adopted by Dr. Hamilton in the Coleoptera, I have no doubt the results will be interesting, and a number of species now considered distinct more on account of difference of locality than anything else, will be amalgamated.

It has been noted that the Pacific coast fauna more nearly approaches that of Europe than the Eastern, but I do not know that in a species common to both countries a greater similarity has been noticed between the Western specimens and those of Europe than the Eastern. Last Summer I had sent to me a number of chrysalids of *Vanessa antiopa* from San Jose, Cal., and when they disclosed the perfect insects I found them all to be intergrades between the specimens found here (Philadelphia) and those of England and Germany. I had previously noticed that the European *antiopa* could always be distinguished from the American example by the less irrorate character, and usually lighter color of the yellow border of the wings, the former of which is generally most markedly illustrated on the little tail to the inferior wings and the similar projection on the superiors. The European specimens are also usually smaller. The Californian examples are intermediate between the Eastern and European as far as the dark peppering on the border is concerned, and could be readily picked out from the others. I leave it to some one else to point out the significance of the observation. Among the chrysalids there was one, three or four shades lighter in color than the rest, and perhaps also a little larger, which disclosed the rare and interesting variety *hygiæa* Hdrch. (Verz. Eur. Schmett. p. 7, 1851), of which *lintnerii* Fitch (3d Rep. Trans. N. Y. State Agr. Soc. p. 485, 1856) is a synonym. It will be interesting to know whether a very much lighter colored chrysalis is an indication of a coming *hygiæa*. In Mr. Cockerell's list of "American Species Representative of European" he omits *Vanessa Californica* and *V. polychloros*, which are probably one and the same thing. It would be interesting to know whether *Californica* produces anything analogous or the same as the varieties of *polychloros*, *testudo* and *pyromelas* given in Kirby. I do not know of any described variety of the American species. *Grapta faunus* and *G. C-album* are undoubtedly identical, as has been pointed out by Strecker.

To the list of American varieties of British species may be added *P. rapæ*, var. *immaculata* (Can. Ent. July, 1889, p. 128); this makes five in all. I hope that some one will give a list with the bibliography, of the Lepidoptera common to Europe and America, and when a new list of the North American Lepidoptera is prepared the whole geographical range of the species (when found outside of America) will be given.

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## ELEMENTARY ENTOMOLOGY.

### Second Paper—The General Structure of Insects.

In those papers of this series which treat of the anatomy of Insects in general, we have largely drawn, with the author's permission, from Prof. J. H. Comstock's excellent "Introduction to Entomology."[*]

Thanks to the kindness of Prof. A. S. Packard, we have also made use of his well-known "Guide"[†] and his valuable "Entomology for Beginners."[‡]

As stated in the first paper the body of an Arthropod, and consequently that of an Insect, is made up of a series of rings or *segments*, within which are the vital apparatus and muscles. Confining our attention to insects, it is to be noticed that even young larvæ[§] just hatched from the egg show this segmentation of the

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[*] An Introduction to Entomology by John Henry Comstock, Professor of Entomology and General Invertebrate Zöology in Cornell University, and formerly United States Entomologist. With many original illustrations drawn and engraved by Anna Botsford Comstock. Ithaca, N. Y. Published by the author 1888, pp. iv, 234, 201 figures. Price $2.00.

[†] Guide to the study of Insects and a treatise on those injurious and beneficial to crops for the use of Colleges, Farm-schools and Agriculturists by Alpheus S. Packard, M.D., with fifteen plates and 670 woodcuts; ninth edition. New York, Henry Holt & Co., 1889, 715 pp. (first edition, 1869, Salem)

[‡] Entomology for Beginners. For the use of Young Folks, Fruit-growers, Farmers and Gardeners, by A. S. Packard, M.D., Ph. D.; second edition, revised. New York, Henry Holt & Co., 1889, 367 pp. 272 figs.

[§] It is hardly necessary to remind the reader that an Insect is an Insect, whether it is an unhatched egg, a growing larva, an apparently lifeless pupa, or a flying or creeping imago. Imagos being so much more conspicuous than the preceding stages, have naturally received both common and scientific names first.

body. If such a young larva be examined* the jointed appearance of the exterior will be seen. The skin of this young larva is quite soft, but becomes harder as the larva grows. This hardening is due to the deposition in the outer layer of the skin (called the *cuticle*) of a horny substance—*chitine.* The chitine is deposited in the cuticle of the different segments, but there is left a narrow space around the body between each segment, in which there is little or no chitine. These narrow rings of unaffected skin divide the segments from each other, and are termed *sutures.* Remaining soft, the sutures permit a freedom of motion of the hard segments upon each other.

In larvæ the sutures are usually wider than in the corresponding imagos. Very often the sutures themselves become hardened by chitine, so that the line of separation between two segments disappears. Such an obliteration of sutures occurs very frequently in the head and fore-parts of imagos, and less frequently in the hind parts.

We have spoken of the segments as hard, but the hard part of any one segment is not a continuous ring. On the contrary, the hard part of a segment consists of several pieces which are more or less free to move upon each other. These pieces are the *sclerites* (from the Greek *skleros,* hard). Some of the soft cuticle remains between the sclerites, and this separating portion also receives the name of *suture,* and like an inter-segmental suture may also become "obsolete" (*i. e.* obliterated).

The skin, originally soft, but now with its cuticle hardened in the segments, the hard part of each segment consisting of several sclerites, forms the *body-wall* of the Insect.

The reader of this series already knows that all an insect's growth is completed in its larval state. As a larva grows quite rapidly, and as chitine is being constantly deposited in the cuticle, the cuticle thus hardened loses its elasticity and is soon too small for the increasing size of the body. Consequently it splits along the middle line of the back, and through this fissure the insect withdraws itself from its chitinous coat. Or, in other cases, the cuticle comes off gradually in thin shreds. The "new skin" contains very little chitine as yet, and being quite elastic, stretches to accommodate the size of the body. This skin (cuticle) in turn becomes hardened, is likewise cast off, or *moulted*, and succeeded by others, varying in number in different species of insects. Very often there are changes in the shape, color, etc., of the larva after successive moults.

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* The student cannot be too strongly reminded that he should compare these papers with some insect, say a grasshopper.

Technical names for the process of moulting are *ecdysis* and *exuviation*, and for the moulted skins, *exuviæ*.

In the case of those insects passing through a complete transformation, when the larva moults for the last time, it becomes a pupa, usually of quite dissimilar shape from the larva, and usually quiet, that is, does not move from place to place. The last moult of the insect's life is when the cuticle of the pupa splits open and the imago emerges, and, after a short period, spreads its wings and begins its ærial life.

Where the insect undergoes but an incomplete transformation, when the nymph moults for the last time, the imago state is entered at once.

Hitherto, in speaking of the segmented form of an insect's body, reference has been made solely to the body-wall. So far as the internal organs are concerned, the muscles, the nervous, circulatory and respiratory systems, at least, are more or less arranged in correspondence with the segmentation of the body-wall.

P. P. C.

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## "SPORTS" IN VENATION.

BY A. B. CORDLEY.

Some time ago while studying the Hymenoptera collected during the seasons of 1888 and 1889, I found three specimens which puzzled me very much. They apparently belonged to the genus *Nomada*, but differed from all the specimens of that genus in our collection in that the anterior wings had but two submarginal cells. I sent one of the specimens for determination to Mr. E. T. Cresson, who replied as follows: "The bee you sent is one of the varieties of *Nomada maculata* Cress., a very variable species. I have seen specimens in which the first transverse cubital nervure was obliterated in one anterior wing, but not in both as in the specimen you sent. Are these nervures absent in both wings in the specimens you have? If so it is both curious and interesting. Such 'sports' occur frequently among the Saw-flies, but rarely among bees." On referring to the specimens retained

I found that the nervure in question was totally obliterated in both anterior wings of both specimens. I also found that both specimens did not belong to the same species, one of them proving to be *Nomada imbricata*. Of the other thirteen specimens of *maculata*, and seven specimens of *imbricata*, taken during the same time, all have the three submarginal cells complete, there being no apparent tendency of the first transverse cubital nervure to become obliterated. I have, also, one specimen of *Colletes* Sp. and one of *Andrena* Sp., which have three submarginal cells to one anterior wing, but only two to the other.

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# ON THE HABITS OF SOME MELOINI.

BY H. F. WICKHAM.

Some of our large Western Meloini make striking additions to any cabinet by their bright colors and curious forms. Of these the most beautiful is, in my estimation, *Cysteodemus wislizeni.* This species, with its small head and thorax and immensely inflated elytra which give the hinder part of the body a globular outline, is rather a clumsy object, though its bright blue color more than compensates for any inelegance of form. One who had seen only dead specimens would naturally suppose that it was slow in movement when in fact the exact reverse is the case.

In 1888 I spent a few days at Luna, N. Mex., a nominal station twenty-two miles west of Albuquerque. Near the switch the grass was growing very luxuriantly, and here I had the good fortune to find a colony of this pretty beetle. We arrived in the early morning, and just as I was getting up from the breakfast table in our car, one of the men who had gone out a few minutes before me stuck his head in the door and deposited a "bug" on the floor, which he said he had found running around just outside the car. He looked on it with suspicion, for it had exuded a quantity of yellowish liquid which stuck to our friend's fingers and smelled something like an infusion of all the different vegetables one can think of. I didn't let this prevent me from picking up the "bug," which proved to be the *Cysteodemus* mentioned above, and after a few moments spent in admiration of the brilliant colors, started out to find some more.

I was not yet familiar with its habits, and got only two or three in the few minutes I had to spare before leaving for the scene of our work through the day, but on coming back about six o'clock P. M., I saw a few more running around. They hold the body high up from the ground and get over the ground at a good rate, looking as if they ran on tiptoe, if we may use such an expression in speaking of insects. I gathered these into the fold, and, as soon as supper was over, a search in the grass disclosed a number of them hanging to the blades a little distance from the ground, apparently feeding, and others taking their evening exercise. Before I left the place I had an opportunity to spend an entire day collecting, and I found that they were all hidden during the middle of the day, but came out to feed or run around in the morning and evening, staying out in the morning until about nine o'clock and coming out again about five o'clock P. M. I never saw this species at any other place, though I looked for it carefully in many different localities. The captures were made early in August.

Another ugly species, from an æsthetic point of view, is *Megetra vittata*, a near ally of our *Cysteodemus*, but with shorter and less inflated wing covers, which do not cover the abdomen. Dried specimens do not give a good idea of the clumsy unwieldliness of the living females of this species, which are so distended with eggs and food, that it seems almost impossible for them to move. They do move, however, though they have not the speed of the preceding species, the abdomen dragging on the ground. The males are more active, and in running lift the body high up like the *Cysteodemus*. The first specimen I saw of *Megetra* was a male, which ran across the platform at Coolidge, N. Mex., July 4, 1888. Next year I looked carefully for the species for nearly a whole day without success, when about four o'clock P. M. I noticed some dark objects in a "greasewood" bush; I went over to investigate, and found a number of these insects feeding on the leaves and others just climbing up the stems. When I counted up the catch I found that I had over forty specimens of both sexes. This was about the 12th of September, and this month is probably their pairing-time, as I took only isolated specimens at other times.

*Meloe sublævis* is found at the same time, and in company with the two species mentioned, but seems to be rarer, as I found only about a dozen in all. *M. impressus* I took in May at Cheyenne, Wyo., feeding on low plants in the early part of the day. *M. americanus* occurred at Bismarck, Dak., in August, feeding in the middle of the day.

# COLLECTING BY LAMPLIGHT.

BY A. S. VAN WINKLE.

(Continued from p. 69, vol. i.)

In order to show the curious connection between the state of the weather and the degree in which moths were attracted to light I will now append the following table, which may prove of great interest to young entomologists, with a view that they may prepare tables in like manner:

| DATE. | No. Moths. | REMARKS. |
|---|---|---|
| Dec. 13 | 1 | Fine starlight. |
| 14 | 75 | Drizzling and foggy. |
| 15 | 41 | Showers, cloudy. |
| 16 | 158 | (120 species) Steady rain. |
| 17 | 82 | Wet, rather moonlight. |
| 18 | 9 | Fine moonlight. |
| 19 | 2 | Fine, clear. |
| 31 | 200 | (130 species) Dark, windy and heavy rain. |
| Jan. 1 | 185 | Very wet. |
| 2 | 68 | Cloudy and showers. |
| 3 | 50 | Cloudy and showers. |
| 4 | 12 | Fine. |
| 5 | 10 | Fine. |
| 6 | 8 | Very fine. |
| 7 | 8 | Very fine. |
| 8 | 10 | Fine. |
| 9 | 36 | Showery. |
| 10 | 30 | Showery. |
| 11 | 260 | Heavy rain all night and very dark. |
| 12 | 56 | Showery. |
| 13 | 44 | Showery, some moonlight. |
| 14 | 4 | Fine, moonlight. |
| 15 | 24 | Rain. |
| 16 | 6 | Showers. |
| 17 | 6 | Showers. |
| 18 | 1 | Showers. |
| Total, | 1386 | |

"Thus it appears that on twenty-six nights I collected 1386 moths, but that more than 800 of them were collected on four very wet and dark nights. My success here led me to hope that, by similar arrangements, I might, in every island, be able to obtain abundance of these insects, but strange to say, during the six succeeding years I was never once able to make any collections at all approaching those at Sarawak."

On reading the above I wished that we had a great many more Wallaces than we do have, *i.e.* if the entomologists of our own country would follow in the footsteps of this great English entomologist the progress of entomology would be much greater. A great many entomologists at present prepare large lists of insects, but probably one in a hundred cites the locality in which the insects are found; a great many on the other hand say North America, which means anywhere between the Atlantic and Pacific coasts, or from the Northern border of Central America to the confines of eternal snow, or just give the separate States. This is a fine state of affairs, is it not? This is also especially exasperating to the student of geographical distribution of insects. The exact locality I think is as of much importance as it is to know what species of plant or plants this or that species of insect feeds on. I hope that hereafter entomologists will pay more attention to the citation of localities. We know what care botanists take when out collecting, they jot down notes of each and every species of plant that they find, of their habits, situation and locality right on the spot. For a very interesting and instructive paper on this subject I would refer the reader to the March number of the "Canadian Entomologist," page 46, where Mr. Cockerell expresses his views.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

Dr. S. W. WILLISTON, of Yale University, New Haven, Conn., the Dipterologist, has accepted a professorship in the University of Kansas, at Lawrence.

INSECTS NAMED.—1. *Penthe obliquata;* 2. *Melanotus communis;* 3. *Holotrophus bifasciatus;* 4. *Aphorista vittata;* 5. *Aphodius fimetarius;* 6. *Eros aurora.* W. M. HILL, Chester, Pa.

VERY COSTLY INSECTS.—Dr. L. B. Clifton, the well known naturalist, has succeeded in hatching out a rare species of moth, known to entomologists as *Attacus luna*. For a specimen of this moth Dr. Clifton was paid $100 two years ago by the Earl of Roseberry, who is quite an enthusiast in that line. The present specimen is valued at $50.—From the *N. Y. Telegram*.—(More newspaper entomology.)

POLYBIA CUBENSIS IN FLORIDA.—Among some Florida Hymenoptera received from Mrs. A. T. Slosson, of New York, were three specimens, with the nest, of a species of *Polybia*, which, on determination, proved to be *P. cubensis* Sauss. As there is no doubt as to this species being an inhabitant of Florida, I see no reason why it should not be added to the fauna of the United States. Mr. Charles W. Johnson, of the Wagner Institute, Philadelphia, has informed me that he has also taken this species in Florida.—WM. J. FOX.

THAT observant naturalist, Cons. E. L. Layard, writing from New Caledonia, bears witness to the fact of rotten fruit being a very strong attraction to Lepidoptera. He writes: "At this moment I have in my verandah a parrot, which is daily regaled with a portion of banana. Every evening I see a dozen or more of the large Sphingidæ and Noctuæ trying to effect an entrance into the cage to get at the rotting fruit, which is generally invisible from the outside. . . . I always found bananas the best bait to attract the night flyers, but only when they began to rot (*Rhopalocera Malayana*)."—Try it.

OF THE habits of the typical form of *Charaxes athamas* in N. W. India we have a few particulars from Capt. Lang. It is "an insect of extremely rapid flight, flashing like lightning up and down the rocky-bedded streams in the Himalayan glens (3000 to 5000 feet). It pitches on rocks in mid-stream and flashes off again if approached." Some Lepchas, who, in Sikkim, make what they can by catching insects, and selling them to visitors, take advantage of the known partiality of butterflies for wet sand. Mr. De Nicéville states that "in one place upon a large flattish stone near the middle of the stream the men had put some sand and kept it watered, and it was surprising the number of butterflies that came to their 'trap' and were caught (*Rhopalocera Malayana*)."

WHILE VISITING at Sarver Station, Butler County, Pa., last July, I took quite a number of *Colias philodice*, *Ab. alba*, and among them was a fine, perfect male; this is the first white male that has ever been taken to my knowledge, so this note to the NEWS may prove of some interest to its readers. It is pure white on the upper surface, with a faint yellowish tint on the primaries; the black border, including both pairs of wings, is sprinkled with white scales; underneath it has a smoky appearance, and the submarginal row of orange spots is wanting, both on the primaries and secondaries.*—GEO. A. EHRMAN, Pittsburg, Pa.

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* If the genitalia were examined this would probably be found to be a female.

DOLERUS ARVENSIS Say and DOLERUS UNICOLOR Beauv.—These flies have been plentiful in this vicinity for the past ten days or more, and are usually found resting upon dead weeds of all sorts. They have been especially abundant among the branches and in the vicinity of a low spreading bur-oak tree, the buds of which are fairly dripping with a very sweet liquid that has oozed from them as the result of the myriad punctures inflicted by a minute gall-fly, *Neuroterus vernus* Gill. I visited this tree on the 26th of April in company with a student, Mr. H. H. Raymond, who called my attention to the mating of the black saw-fly with *D. arvensis*. A few moments later we both saw two more of these two species pair, and a day later we each saw the same thing repeated. The males in every case were *D. unicolor*, and the females *D. arvensis*. I had previously noticed that of about forty specimens of each of these species in my collection all of the former were males and all of the latter were females. Say also notes the fact that only the male of *unicolor* and the female of *arvensis* are known. These facts with the above observations put it beyond a doubt that these two saw-flies are male and female of the same species. As *unicolor* Beauv. was first described (1805), this name will hold for the species, and *arvensis* Say will have to fall to the rank of a synonym. While mating the male and female face in opposite directions, and the wings and abdomen of the male are covered by the wings of the female. The union lasts but three or four seconds.

C. P. GILLETTE.

EXCURSION.—The committee from the Brooklyn, Newark and Philadelphia Societies have decided upon Upper Jamesburg, N. J., as the place where the field-meeting of the entomologists of the three cities and neighboring points is to take place on the 4th of July next. Jamesburg is on the Amboy Division of the Pennsylvania Railroad, and may be reached from New York *via* Perth Amboy and Rahway at 9.10 a. m., Newark at 9.36 a. m.; *via* Monmouth Junction, New York, 7.20 a. m., Newark 7.50 a. m. Leave Philadelphia from Broad Street Station at 6.50 a. m., *via* Camden, at 7.10 a. m. The 7.20 a. m. from New York *via* Monmouth Junction, meets the 6.50 from Philadelphia at Monmouth Junction, and this train is recommended, as it will bring the party into Jamesburg at the same time. Excursion fare about $2.10 from New York and Philadelphia. All the entomologists desiring to attend will be heartily welcomed, whether members of the societies organizing the excursion or not, but in order that the necessary arrangements for creature comforts can be made, all those expecting to take part in the field-meeting will please notify one of the members of the committee as soon as convenient. Further information can be obtained from the committee:

Dr. D. M. Castle, 2007 Arch Street, Philadelphia
C. P. Machesney, 65 Broadway, N. Y.
C. H. Roberts, 235 W. 122d Street, N. Y.
J. B. Smith, Rutgers College, New Brunswick, N. J.
H. W. Wenzel, 1115 Moore Street, Philadelphia.

# Entomological Literature.

NATURE, February, '90.—Notes on Dr. A. R. Wallace's "Darwinism," by T. D. A. Cockerell (an interesting paper, largely entomological).

ENTOMOLOGISCHE NACHRICHTEN, xvi, No. 6, March, 1890.—"The Genera and Species of Cryptinæ revised and tabulated I," O. Schmiedeknecht.

ANALES DE LA SOCIEDAD CIENTIFICA, xxix.—Systematic and synonymic enumeration of the Argentine, Chilian and Uruguayan Formicidæ, Dr. C. Berg.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, 2e Année, No. 7, April, 1890.—"Acarines and Marine Insects of the sides of the Boulonnais (continued)." R. Moniez.

LE NATURLISTE CANADIEN, April, 1890.—Continuation of the Hemiptera-Homoptera of the Province of Quebec, contains the following new species, *Pemphigus alni.*

ATTI DEL REALE ISTITUTO VENETO DI SCIENZE, LETTERE ED ARTI (November, 1888—October, 1889), Tomo vii, "View of the Italian Acarofauna," G. Canestrini, with four plates.

OVERSIGT OVER DET KONGELIGE DANSKE VIDENSKABERNES SELSKABS (Copenhagen). Bulletin for 1889, No. 2.—"Contribution to the anatomy of the Ant-lions," by Fr. Meinert, with two plates.

COMPT. RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, 1 Mars, 1890.—"Heterocera Exotica, new genus and species from the Dutch East Indies (continued)," by J. M. Heylaerts; *Squamura* n. g.

NATURWISSENSCHAFTLICHE WOCHENSCHRIFT (Berlin) for Mar. 2, 1890, contains an article on swarms of "Butterflies in the South Atlantic Ocean remote from the land," off the Argentine coast, in February, 1887.

THE ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, vol. xlix, heft 3. contains "Researches on the first embryological phenomena in the eggs of Insects—I. The egg of *Pieris brassica,*" H. Henking, with three plates.

LE NATURLISTE CANADIEN for February, 1890.—Continuation of the notes on Hemiptera—Homoptera of Quebec (fams. Jassidæ and Psyllidæ); a new species of *Erythroneura* (*E. mali*) and one of *Idiocerus* (*I. Duzeei*) are described.

LE NATURLISTE CANADIEN, March, 1890.—"Hemiptera-Homoptera of the Province of Quebec (continued)," fams. Psyllidæ and Aphidæ; includes the following new species: *Psylla recticeps, Diraphia 4-cornis, D. sanguinea, Livia saltatrix, L. bifasciata.*

PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES II, 1889.—Entomological Communications, Dr. H. H. Behr; genus *Neophasia* Behr = *Eucheira* Westw., with three species, *socialis* Westw., *Terlootii* Behr, *menapia* Feld.; *Dryocampa Riversii* n. sp., Cal.

MEMOIRES DE LA SOCIETE DE PHYSIQUE ET D'HISTOIRE NATURELLE DE GENEVE, xxx, No. 6.—New or little-known Locustidæ, A. Pictet; contains many new genera and species, including the following from North America, *Idiostatus* n. g., *I. californicus*, figured.

ZOOLOGISCHER ANZEIGER, xiii, No. 329, 10 Mar. 1890.—"Butterflies' wings and the Imaginal disk of the same," and "Gland-system of the Skin in Bombycidæ (silk-spinners), by E. Verson. No. 330, 17 Mar., '90. "On the Embryology of *Blatta germanica*" by N. Cholodkovsky.

WE have lately received Vol. i, No. 1, of the Entomologist's Record and Journal of Variation, edited by J. W. Tutt. This fills a very important gap in entomological literature, and is both interesting and useful from a scientific standpoint. We wish it all success and a long life.

IN THE COMPTES-RENDUS DES SEANCES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE for Feb. 1, 1890.—A Forel has a note on "A parasite of *Myrmecia forficata* Fabr." The parasite is also a hymenopter, *Eucharis myrmeciæ* P. Cam., whose nymphs were found in chrysalids of the *Myrmecia* from South Australia.

ENTOMOLOGISCHE NACHRICHTEN, xvi, 4, February, 1890.—New Histeridæ, J. Schmidt; includes one North American species, *Saprinus sulcatulus*, from California. Orthopterological communications, Dr. F. Karsch; on *Phaneroptera* from Asia and Africa; two new genera are formed, *Ceratopompa* and *Tetraconcha*.

FROM PROF. C. BERG we have received a copy of his "Quadraginta Coleoptera Nova Argentino (from Ann. Univer. Buenos Aires, vi, 1889)." The forty new species from the Argentine Republic here described are of the families Cerambycidæ, Meloidæ, Mordellidæ, Cistelidæ, Tenebrionidæ, Malacodermata and Buprestidæ.

MEMOIRS OF THE MUSEUM OF COMPARATIVE ZOOLOGY AT HARVARD COLLEGE, Vol. xvii, No. 1, is Mr. L. Cabot's.—"The Immature State of the Odonata, Part III.—Subfamily Cordulina," with six plates. The nymphs of twenty-four species of *Cordulina* and eleven species of *Pantala* and *Tramea*, are described and figured excellently.

WE have received from M. Ernest Olivier his excellent Catalogue of the Coleoptera of the Department of the Allier, France, forming Part I of Volume II, of "Faune de l'Allier," published at Moulins, 1890. Faunal lists of restricted areas are always of value as supplying data for geographical distribution, and such is M. Olivier's work, which fills 375 pages, and is provided with a valuable index—table of genera.

ABHANDLUNGEN [DES] SENCKENBERGISCHEN NATURFORSCHENDEN GESELLSCHAFT (Frankfurt a. M.), xvi, heft 1, '90.—"The Lepidopterous Fauna of the Island of Porto Rico," H. B. Möschler, 1 plate; contains numerous new genera and new species. This is a very useful and important paper, as it gives a complete list of the species of the island, both macro and micro, with all the references (pp. 290).

MEMORIE DELLA R. ACCADEMIA DELLE SCIENZE DELL' ISTITUTO DI BOLOGNA, Serie iv. Tomo ix, 1888.—"On the Figure and Structure of the Facets of the Cornea and on the Refractive Medium of the Compound Eyes of the Muscidæ," G. V. Ciaccio, 1 plate. "Anatomical Composition of the Nerves and their mode of termination in the muscles of the Grasshopper (*Oediopoda fasciata* Siebold), V. Mazzoni, one plate.

ICONES ORNITHOPTERORUM.—A monograph of the Rhopalocerous genus Ornithoptera, or Bird-wing Butterflies by Robert H. F. Rippon; Part 1. To be completed in twenty parts, with a map and nearly eighty plates; Part 1 contains four plates, giving colored figures and the neuration of *O. urvilliana*, *hippolytus* and *crœsus*. The text is very exhaustive. If the remaining parts are in the same style as the first, the above will be a grand work.

THE FOSSIL BUTTERFLIES OF FLORISSANT, Samuel H. Scudder.—This is an extract from the eighth annual report of the Director of the Department of the Interior, 35 pp. 2 plates. The following new genera are described: *Jupiteria*, *Lithopsyche*, *Nymphalites*, *Apanthesis*, *Prolibythea* and *Stolopsyche*. The new species are *Jupiteria charon*, *Lithopsyche styx*, *Nymphalites obscurum*, *Apanthesis leuce*, *Prolibythea vagabunda* and *Stolopsyche libytheoides*.

THE YOUNG NATURALIST, January, 1890 (London).—The Origin and Loss of the Wings of Insects, Linnaeus Greening. The Pterophorina of Britain, J. W. Tutt. Same for February, 1890. The Pterophorina of Britain (continued). Notes on the possible advantages of melanic variations to Lepidoptera, Lord Walsingham. The Origin and Loss of Wings of Insects, Linnaeus Greening. Curious Visitors at Sugar, G. Pullen. Retarded Emergence, John E. Robson.

TRANSACTIONS ENTOMOLOGICAL SOCIETY OF LONDON, Part I, 1890, with six plates. On the phylogenetic significance of the wing-markings in certain genera of the Nymphalidæ, Frederick A. Dixey. Systematic temperature experiments on some Lepidoptera in all their stages, Frederic Merrifield. This paper and the accompanying plates are of great interest, as they show one of the causes of variation in a species, and also teach an important lesson to those who are too hasty in describing new species of Lepidoptera.

ANNALEN DES K. K. NATURHISTORISCHEN HOFMUSEUMS (Wien), Bd. iv, No. 4, 1889.—The Hymenopterous Group of the Evaniidæ, monographically treated," by A. Schletterer, 3d Abtheilung, with four plates;

numerous new species are described from all parts of the world, including five species of *Gasteruption* from North America. Bd. v, No. 1, 1890. "[Contribution] to the knowledge of the *Pemphredons*," by F. F. Kohl, including, besides other new species, three from North America of the genera *Cemonus*, *Ammoplanus?* and *Stigmus*.

HORÆ SOCIETATIS ENTOMOLOGICÆ ROSSICÆ, xxiii, 1890, contains papers on Russian and Asiatic insects, including new species of Heteroptera, Hymenoptera, Coleoptera and Lepidoptera; Revision of the copulatory armature of the males of the Chrysides, Gen. Radoszowski; On the anatomy of *Sesia apiformis* and *tipuliformis*, E. Brandt; Anatomy of *Vermipsylla alacurt*, J. Wagner; Revision of the European species of the genus *Phronia* Winnertz, with the descriptions of two new genera, *Macrobrachius* and *Megophthalmidia*, H. Driedzicki, etc.

BIOLOGIA CENTRALI-AMERICANA; Part lxxxii, Feb., 1890.—Arachnida-Araneidea O. P. Cambridge, pp. 57—64, pl. 6; Coleoptera, vol. 2, pt. 1, D. Sharp, pp. 305—312, vol. 3, pt. 1, C. O. Waterhouse, pl. 9, vol. 6, pt. 1, supplement, M. Jacoby, pp. 169—176. Lepidoptera-Heterocera, vol. 1, H. Druce, pp. 369—384, pl. 32. Diptera, vol. 2, F. M. van der Wulp, pp. 57—88; Part lxxxiv, Arachnida-Acaridea, Otto Stoll, pp. 17—24, pls. 12—14. Coleoptera, vol. 2, pt. 1, D. Sharp, pp. 313—336, vol. 7, H. S. Gorham, pp. 129—144, pl. 7. Hymenoptera, vol. 2, P. Cameron, pp. 65—80, pl. 5. Lepidoptera-Heterocera, vol. 1, H. Druce, pp. 385—392. Rhynchota-Heteroptera, W. L. Distant, pp. 329—336. Diptera, vol. 2, F. M. van der Wulp, pp. 89—112.

BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xxxiii, 2 heft.—The Hymenopterous genera *Stenophasmus* Sm., *Monomachus* Westw., *Pelecinus* Latr. and *Megalyra* Westw., monographically treated," A. Schletterer. "Contribution to the knowledge of the Ascalaphidæ of Madagascar," Dr. F. Karsch;* *Balanopteryx*, *Amerridops* n. g. "On a new East-African genus of Libellulidæ, separated for *Idionyx luctifera* Selys,"* Dr. F. Karsch, *Schizonyx*, also *Dicranopyga*, n. g." "New Histeridæ from Paraguay," J. Schmidt; *Hesperodromus*, *Discoscelis*, *Colonides*, *Termitoxenus*, n. g. "Contributions to the knowledge of the species and genera of Libellulina,"* Dr. F. Karsch; *Paltothemis*, *Potamarcha*, *Corduliops*, *Helothemis*, *Malamarptis*, *Oligoclada*, *Micromacromia*, *Allorhizucha* n. g. "Three new Tenebrionidæ from Tripoli,"* G. Quedenfeldt; *Pachylodera* n. g.

LES INSECTES VESICANTS.—H. Beauregard, Paris, 1890. A large octavo volume of nearly 600 pages with many illustrations in the text and large lithographic plates of anatomical and microscopical details. It is divided into four parts, the first is anatomical, second the physiology and pharmacology, with special researches on the seat of the vesicating property, the third is devoted to classification, the fourth a catalogue of all species described to date. A new classification is adopted, based on the habits of the secondary larva, which does not differ materially from that already in vogue, based on the characters of the insects themselves. Some of our genera were unknown to the author, and a good number fairly well misunderstood. While the work will be useful for reference as a compendium it will hardly become a standard in classification.—G. H. H.

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* Contains new species other than North American

VERHANDLUNGEN DER K. K. ZOOLOGISCH-BOTANISCH GESELLSCHAFT IN WIEN, Bd. xxxix, Heft 3.—"Contributions to the knowledge of the chilopods," B. Schaufler, with one plate and four zincographs, treating of the male and female genital organs. "Arachnidæ Transcaspicæ," E. Simon, describing new species and three new genera, *Attulus* (fam. Attidæ), *Scylax* (fam. Drassidæ) and *Phyxioschema* (fam. Avicularidæ), Heft 4 (same Band). "Determination-table of the Trichopterygidæ of the European faunal district," by C. Flach, with five plates and one zincograph; the table is arranged both for genera and species, and includes six new species. "Fourth Contribution to the Dipterous Fauna of Tyrol," E. Pokorny, including new species of various genera of the families Bibionidæ, Anthomyzinæ and Helomyzinæ, and establishing two new genera, *Chiastocheta* (fam. Anthomyzinæ), type *Aricia trollii* Ztt., and *Steringomyia* (fam. Sarcophaginæ), type *S. stylifera* n. sp.

NORTH AMERICAN LEPIDOPTERA. REVISED CHECK-LIST OF THE N. AMERICAN NOCTUIDÆ by A. Radcliffe Grote, A. M., Part I. Thyatirinæ—Noctuinæ. Bremen, 1890. Printed by Homeyer & Meyer, Rutenhof, pp. 52. Preface and Index.—This list, Mr. Grote states, is to supersede or take the place of the list of 1875–76, and like the latter the new list simply enumerates the species and proposes a number of new generic terms without description. "So far as I am concerned it closes my thirty years' work in the North American Owlet moths and represents my present comprehension of the natural classification of the family."* Mr. Grote separates the usual small aggregation as Thyatirinæ, and places all the rest of the genera into the Noctuinæ, dividing them tribally. The Bombycoidi head the list with three genera. In this tribe and in the preceding subfamily species described by Dr. Strecker, Mr. Edwards and myself, even as far back as 1876; have been omitted.

The Apatelini contain fourteen genera. The Agrotini contain eleven; about fifty species of *Agrotis* described by myself are omitted. In suggesting that the species of *Agrotis* need re-arrangement, a series of characters is given with a show of originality, although they had been used by European authors thirty years ago. Mr. Grote is comfortably unaware that over one hundred species of what he calls *Agrotis* are structurally absolutely identical with the two species which he separates as *Carneades*.

The Dicopini follow, with four genera.

The Hadenini contain forty-four genera, and in this tribe are contained the typical Owlets. The species and genera referable here, described by me in 1887 are omitted, and my Revisions of *Oncocnemis*, *Oligia* and *Pseudanarta*, are apparently unknown to the author.

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* See Proc. Am. Phil. Soc. xxi, 143, 1887, for almost identical language.

The Arzamini have two genera, the Nonagriini eight, the Scolocampini six, and *Nolophana* has a little tribe all by itself. Six genera constitute the Caradrini, while the Orthosiini contain thirty-three genera, among them *Tæniocampa*, *Glæa* and *Orthosia*. As usual, my genera and species are omitted, even those described in 1887. My recent Revision of Tæniocampinæ Proc. U. S. Nat. Mus. 1889, pp. 455-496, places the species and genera into a more natural grouping.

The Calocampini have three genera, *Cleophana* and *Cucullia* each form a tribe, the Eutelini have three genera, the Anomiini five, while *Litoprosopus* again forms a singular tribe.

The Plusiini have six, the Calpini four, and the Stiriini eight genera.

In the Heliothini Mr. Grote proposes a few more generic names, and adds *Lepipolys*, *Anarta*, *Cirrhophanus* and *Annaphila* to the tribe.

The Tarachini contain three genera, and *Cerathosia* is placed here and elevated to the tribal rank. Mr. Grote again goes over my supposed blunders and does not seem to know my paper in which the venation is figured. I have explained how the obliteration of vein 5 of secondaries by the Canada balsam caused my mistake. Mr. Grote affects to discredit this explanation, which all, who have ever mounted bleached wings, can easily substantiate. Knowing the danger as I did, I should have been more careful; but, as it is the only mistake of mine Mr. Grote ever discovered, he will no doubt continue to harp on it. The Eustrotiinæ contain all the remaining genera save *Hyblæa*, which forms a tribe. The remainder of the pamphlet is taken up with generalities and criticisms, in which Messrs. Riley, Hulst and myself fare ill. In his characterization of the Noctuidæ Mr. Grote says: "the front pair [of tibiæ] rarely with an epiphysis." I know of no species in which this organ is wanting. It is scarcely worth while noticing the vagaries of these ten pages, winding up with "But I have no longer time to indulge in philosophy or sentiment. Already I hear the roaring of the lions from those heights where Dr. C. V. Riley and Professor J. B. Smith browse together upon Government pastures" !!!

This is pathetic, undoubtedly, and characterizes the list, which is fully five years behind the time, and is as remarkable for what it lacks as for what it contains. —JOHN B. SMITH.

ENTOMOLOGICAL NEWS for May was mailed May 3, 1890.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. SEPTEMBER, 1890. No. 7.

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# WINTER COLLECTING IN FLORIDA.

BY ANNIE TRUMBULL SLOSSON.

(Continued from p. 83, vol. i.)

To attract moths at night we used a large lamp with Rochester burner, giving a very brilliant light. The first time we tried it very few insects came, though the night seemed favorable, warm, dark and still. After waiting an hour or two, with little gain, we extinguished the lamp preparatory to going indoors, when, at once, moths began flying into the dimly-lighted windows and resting there. This occurred again and again, until we felt assured that our brilliant light frightened away rather than tempted the moths of Punta Gorda. It was not until some weeks after our discovery of this fact that we read in ENTOMOLOGICAL NEWS for February of Mr. Doherty's letter as to his collecting in the Naga Hills. In this you will remember he expresses the opinion that "light used in out-of-the-way places repels rather than attracts." I frequently spent an evening in my room with a bright gas-light and a large kerosene lamp burning directly in front of the open window. No insects came, but when I had turned out the gas and lowered the flame of my lamp, moths would soon begin to fly in.

At sugar, although the number of moths taken was large, the variety was very small. In a catch of fifty or sixty moths there would often be but two or three species. *Eubolina stylobata* was always at these sugar stations in large numbers, also *Agrotis incivis*, *A. malefida* and various species of Homoptera, particularly *H. edusina* and *H. benesignata*.

The colony of West Indian insects, of which Mr. Schwartz and others have written, is well represented at Punta Gorda. I found one night resting near a lighted window a beautiful specimen of the "Spanish moth," *Euthisanotia timais* Cram. It bore the bloom of extreme youth, and could not have emerged from the pupa many hours before. It is an exquisite creature, with its fore wings of carmine and orange and secondaries of leaden black.

I took also one specimen of a Sphingid described and figured by Grote in his "Notes on Cuban Sphingidæ (Proc. Ent. Soc. Phil. vol. v)," *Hemeroplanes pseudothyreus*. I do not recall its record from Florida previous to my capture, but it should have its place in our lists. It is a curious insect, much like *Thyreus* in general appearance, but with a peculiar discal mark, like a white arrow-head, with a small white dash above it. Many fine fresh specimens of the large geometer *Oxydia vesuliata* Cram. flew to the lighted windows at night. They are exceedingly variable, some very dark purple-brown, some uniformly light grayish drab, and others with median space of pale ochre, but all with the distinctive large, black, diffuse patch on secondaries, near outer margin. I found also *Urapteryx floridata* Gr.

Doubtless many of my unidentified moths will prove to be West Indian forms. Although I found so many interesting species in Florida this Winter, yet insects were much less plentiful than in ordinary seasons. The long continued drought, with one or two severe freezes, interfered seriously with plant and insect life. In a dozen years I have never seen a Winter where butterflies were so scarce, every one spoke of this, and even the ordinary tourist noticed it

## ELEMENTARY ENTOMOLOGY.

### Third Paper Regions and Appendages of Insects.

### The Head.

As stated in the first paper of this series,* the body of a perfect insect is divided into three regions,—the head, the thorax and the abdomen.

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* Entomological News, pp. [illegible] May [illegible]

This division into regions is not to be confounded with the division into segments; each region consists of a number of segments. In the case of those insects undergoing a complete transformation (butterflies, bees, beetles, etc.), it is only the imago whose body shows clearly this division into three regions. On the other hand, the larvæ of such insects as dragonflies and grasshoppers, whose transformation is incomplete, show a very marked division into three regions, even when just hatched from the egg. The tri-regional division of the body may be more or less clearly perceived in those insects referred to in the first paper as passing through two states,—fish moths and spring tails.

Many of the segments of an insect's body bear paired, jointed appendages, one pair to a segment. These appendages may be antennæ ("feelers"), jaws, legs, claspers, etc. The wings, although often spoken of as appendages, do not anatomically correspond, or are not *homologous** to the appendages just referred to.

The form, proportion, shape and relative development of the different parts of the trunk and appendages of insects vary very greatly. Only the more general, typical arrangement of these parts will be described in these papers treating of insects in general. The modifications must be left to subsequent papers on the separate orders. In these general papers reference is usually made to the imago, when describing anatomical parts.

THE HEAD of the imago is usually distinct from the rest of the body. The segments of which it is composed are not easily distinguishable, owing to the sutures being more or less obliterated, and one might be tempted to say at first sight, that it consisted of but one segment. Comparative study, however, has shown that it is composed, not of one, but of several segments. The exact number is perhaps four, although this is not entirely certain.

Prof. Comstock has adopted a convenient classification of the parts of the head, which we cannot do better than follow here. He divides the parts of the head into fixed parts and movable parts.

The fixed parts are the *compound eyes*, the *simple eyes*, the *occiput*, the *epicranium*, the *clypeus*, and the *gula*.

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* In the technical language of Comparative Biology, *homologous* refers to *anatomical* similarity, *analogous* to *physiological* similarity.

The movable parts are the ***antennæ*** and the ***mouth parts***.

The compound eyes (fig. 1, *a*) are quite conspicuous, and usually are easily seen and recognized as eyes. They are two in number, and are placed one on each side of the head. The surface of each compound eye is made up of a large number of hexagonal facets, fitting against each other like the cells of a honey-comb. Each facet is the cornea of a distinct simple eye. The number of facets in the compound eyes of different insects varies from 50 to 30,000 (Comstock). Sometimes the facets are quadrangular (Packard).

The simple eyes (fig. 1, *e*) are small and not very conspicuous. They are placed on the top (dorsal* surface) of the head, between the compound eyes. Ordinarily there are three simple eyes, but their number varies from one to four; they are usually wanting in beetles. Compound eyes are clusters of simple eyes. Larvæ have only simple eyes, situated on the sides of the head. During growth they "increase in number, and finally coalesce to form the compound eye, or compound cornea, the surface of which is very convex and protuberant in the predaceous insects, or those requiring an extended field of vision (Packard's Guide)." Usually the compound eyes are referred to as simply "the eyes," while the simple eyes are termed *ocelli* (singular *ocellus*) or *stemmata* (sing. *stemma*).

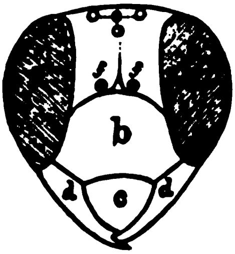

**Fig. 1, Front view of the Head of a Wasp.**
*a*, *a*, the compound eyes; *b*, the clypeus, *c*, the labrum; *d*, the mandibles; *e*, three ocelli, or simple eyes, *f*, *f*, places of insertion of antennæ. The letter *e* is placed upon the vertex, *f f* upon the frons.

The occiput is the rear or base of the head, and articulates with the first segment of the thorax.

The epicranium (fig. 1) is in front of the occiput, and, in general, forms the top or dorsal portion of the head, but it very often forms part of the sides of the head and even of the under (ventral) surface. On account of its extent, names have been given to different parts of the epicranium. The *vertex* is its topmost (most dorsal) part, the *front* or *frons* is its most anterior part, the *genæ*, or cheeks, its sides, or lateral parts. The ocelli are usually situated on the vertex.

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* When an insect is standing in natural position, its upper surface is *dorsal*, its lower surface *ventral*.

The normal position of the clypeus (fig. 1, *b*) is anterior to the epicranium. Typically, it is composed of two sclerites, the *hind-*, *post-*, or *supra-clypeus*, and the *fore-*, *ante-*, or *infra-clypeus*. The term *epistoma* is equivalent to clypeus. In some insects the equivalent of the clypeus is composed of two pieces, an upper called *nasus*, and a lower or *rhinarium*; again the rhinarium may be absent. To the lower or anterior border of the clypeus is attached the labrum, or upper lip.

The gula is in front of, or below the occiput, and is confined to the under or ventral surface of the head. To its anterior border is attached the labium, or lower lip.

The sutures between the fixed parts of the head may be wanting, and the shape and extent of the parts vary greatly. In many insects the fixed parts, excepting the eyes and ocelli, are more or less covered with hair, so that the shape of the parts cannot be seen until the hair is removed. P. P. C.

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## Two Species of Lepidoptera new to our Lists.

BY HARRISON G. DYAR.

While at Lake Worth, Florida, last Winter I captured specimens of two species not in our lists. They are the following:

*Callidryas statira* Cram.—The ♂ is of the color of *C. eubule*, but the border of raised scales extends more than half way across the wing, and there is a large spot of these scales in the end of the cell. The inner edge of this border is nearly straight, and it is very pale yellow, almost white. On the hind wings the border is narrower, more irregular, and ends before the anal angle. Below much as in *C. eubule* ♂, but with only faint traces of any spots.

Taken with *Callidryas eubule* and *C. agarithe*, but less common. January.

*Composia fidelissima* Herrich-Schaffer.—♂ ♀. Head black, with two white spots. Collar and thorax black, with small white spots. Abdomen black, with a very strong blue reflection and a double row of small white spots on the last segments in the ♂. Below neatly banded with white; wings black, a strong blue reflection at the base and end of the cell of primaries and on basal two-thirds of secondaries. On costa of primaries at base are three subquadrate, crimson spots, more or less confluent. In the cell are two white spots, the outer continued on to the costa, but interrupted by the vein. A marginal and a transverse row of white spots, the latter from costa beyond cell to middle of outer margin composed of five spots the last small. The marginal row starts on costa before apex and has four intervenular spots, each nearer the outer margin than the last, and two more spots below, the last above the submedian vein, the one before it large and round. A small spot at base of the wing above submedian vein. The secondaries have a marginal row of nine white spots, the first at the apex, the fourth and the ninth at basal angle, small. Below as above, but the blue reflection on primaries is more extensive. Legs marked and banded with white.

This Zygænid was taken abundantly towards evening flying with *Syntomeida epilais* Walk., than which it was much more abundant.

The flora of the strip of land between Lake Worth and the ocean, as well as that between Indian River and the ocean partakes of a decidedly subtropical character, and many Cuban species find their homes here, of which the occurrence of the above-mentioned species is an example.

## DESCRIPTION OF THREE NEW SPECIES OF HYMENOPTERA.

BY WILLIAM J. FOX.

**Hoplisus foveolata** n. sp.

♀.—Black, shining; head sparsely punctured, hardly as wide as the thorax; clypeus, labrum, basal half of mandibles, scape, first six joints of flagellum, thorax, spots on posterior tarsal joints near apex, and basal segment of abdomen, except ring at apical margin, dark reddish brown; clypeus covered with silvery pubescence in certain lights, with long golden hairs; labrum with a fringe of golden hairs on anterior margin; face with a distinct furrow extending from the lower ocellus to the middle of the face; metathorax feebly punctate, covered with pale brownish pubescence, a deep longitudinal furrow extending from base to apex, interrupted at tip of enclosed triangular space by a deep fovea, the oblique lateral furrows enclosing the triangular space foveolate; wings fuliginous-brown, iridescent; second recurrent nervure received by the second submarginal cell before its apex; line on anterior orbits, apical margin of scutellum, tarsi, and ring on apical margin of basal segment, yellowish; remaining segments of abdomen black. Length .55–.60 inch.

Two specimens, Florida. Collected by Charles W. Johnson, of the Wagner Institution, Philadelphia.

This species resembles somewhat *H. Smithii* Cress., from Illinois, but the wings are darker, the second recurrent nervure is not confluent with the second transverse cubital nervure and the basal segment with the largest portion of it brownish.

**Philanthus eurynome** n. sp.

♀.—Black, shining, deeply, but not closely punctured; vertex, cheeks, thorax on sides and beneath covered with pale pubescence; spot on anterior part of raised space between antennæ, sides of face, narrowed to emargination of the eyes; mandibles, except tip, scape, elongate spot beneath anterior wings, tegulæ, postscutellum, large lateral spots on second segment, elongate spots on third and fourth, the latter with two elongate marks on apical margin yellow; first three joints of flagellum entirely and the remaining joints beneath, raised space between antennæ basally, broad band on occiput extending down to the centre of the cheeks, line on collar, scutellum, first segment, except extreme base, above and beneath, second segment above and apical margins of all the segments dark reddish brown; the first dorsal segment with a deep, black, transverse furrow before its apical margin, the second having a black line before its apical margin; metathorax with a deep furrow extending from base to centre, where it is interrupted, the furrow continuing from a deep fovea and extending almost to the apex; wings yellowish hyaline, with darker apical margins, slightly iridescent, nervures and stigma yellowish brown, first recurrent nervure received by the second submarginal cell at the middle, the second received by the third submarginal cell a little beyond the base; legs brownish, a spot in front and on tips of anterior femora, base of anterior tibiæ and medial tibiæ in front and at base yellow. Length .57 inch.

One specimen. Collected by Mr. C. W. Johnson, in Florida.

**Cœlioxys dolichos** n. sp.

♀.—Black, shining; head and thorax sparsely punctured; sides of the face, cheeks, thorax beneath, metathorax, legs, basal and apical margins of first segment and apical margin of the second, third and fourth segments with pale pubescence; tegulæ impunctured; prothorax produced into a tooth laterally; scutellum produced out over the metathorax in a sharp angle, the lateral teeth long, not acute, the disc of scutellum smooth, shining, impunctured; basal third of wings hyaline, the remaining two-thirds fuscous, slightly iridescent; first recurrent nervure received by the second submarginal cell beyond its base, the second recurrent nervure received by it before its apex; spines of the tibiæ and the tarsi slightly brownish; abdomen sparsely punctured, more closely so on the sides, basal and apical margins of the segments, basal segment concave in front, a distinct carina, beginning at the base of the second dorsal segment and extending to apex, the carina very strongly marked on apical half of last segment, the latter excavated on each side of the carina, compressed before its apex, beneath also carinated, the carina extending out into a point, which is plainly seen from above, the segments beneath with a well marked impunctured apical margin. Length .55 inch.

One specimen. Collected by Charles W. Johnson, in Florida.

This species can at once be distinguished by the carina on the dorsal segments of abdomen.

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## SOME EXPERIENCES IN LARVÆ REARING.

BY ROBERT BUNKER.

If one wishes to gain a knowledge of the life history of a species, it is absolutely necessary to begin with the egg and follow it carefully through the different stages to the imago; and not only one season should be devoted to it, but the same species should be reared several years in succession in order to learn all the varieties of color ornamentation and deviations from the typical form. Such a course would be to the student or beginner like the turning of the kaleidoscope, every turn would bring to view some new variety, some new form, some new feature he had not seen before; and occasionally a veritable monstrosity would come to the front and startle him by its unique appearance. There are other advantages to be gained by rearing moths and butterflies from eggs, you get rid of that bane of the collector—the insidious parasite. One also stands a far better chance of getting rare species, and we may add more perfect ones than by hunting up the imagos. I began rearing moths from eggs many years ago, but confined myself to eggs of foreign silk moths which I could obtain in no other way. Fortunately, a few years ago I found a female *Smerinthus modestus* on the Lombardy Poplar, she laid quite a number of eggs, from which I reared moths and wrote a description of their life history, which was published in the "Canadian Entomologist" at the time, so it is not necessary to re-write it now, but will mention one characteristic I have not noticed in any other species. While feeding, most larva clasp the leaf with their prolegs and manipulate with the mouth and true legs, the body being on a line with the edge of the leaf, but this species, while feeding, rests with its body stretched out at right angles to the edge of the leaf, and by reaching over and turning the head so as to face the edge of the leaf, feeds without inconvenience and as the leaf is eaten away moves up and down laterally. I was curious to know what the result would be when the leaf was eaten, so that there was no standing room, but the difficulty was overcome by abandoning the leaf when half eaten for a fresh one.

A larva that has been attacked by pararsites may sometimes be resuscitated. On one occasion I found a half grown larva of *Thyreus Abboti* on the grape vine, and on the sides of the thorax were half a score or more of eggs; they had hatched out and the young worms had entered the body of their victim, but as the shells of the eggs had been recently broken I thought I would try the effect of chloroform upon the larva, so procuring a feather I swabed the parts thoroughly. Now, it is well known that this species and *Deidamia inscripta* are very sensitive to the touch, and will wriggle around in a vicious manner if touched with a straw or the tip of the finger, but when I applied the chloroform its contortions were violent, a regular cyclone; so violent were its movements that it would throw itself up clear from the earth at the bottom of the cage, and I began to fear the cage itself was in danger of being wrecked. It finally subsided and appeared to be dead. Two hours later, on looking into the cage, I found my sick patient had rallied and was crawling slowly about. I gave it another big dose, and after placing some fresh grape leaves in the cage, left it for the night. The next morning, to my surprise, it had fully recovered, and was apparently as well as ever, and was partaking of the aliment set before it in a very satisfactory manner. After the harsh treatment it had received it began to feed regularly, and in two weeks got its growth, buried itself, and came out a perfect moth the following June.

(To be continued.)

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

IN accordance with the notice on second page of cover, no numbers of ENTOMOLOGICAL NEWS were published in July and August, as every one is interested in collecting, and it is also the time when people take their vacation, the editior and advisory committee included. This is inserted for those who were looking for the NEWS during the last two months.

A SPECIMEN of *Papilio palamedes* was captured in Philadelphia this Summer, it was bright and fresh. Virginia is the northermost point given in the catalogues.

A SWARM of butterflies halted near Placerville, Cal., the other day, and for a time "they were so thick about the springs and moist places that teamsters couldn't see their leaders."

HEMIPTEROLOGISTS will be interested to know that I took many specimens of both sexes of the winged form of *Metrobates hesperius* Uhl. on the Tennessee River at Knoxville, Tenn., June 15th. Hitherto, I believe, the winged form of this species has been found only in the West Indies.

Prof. H. E. SUMMERS.

MR. W. F. KIRBY, author of "A Synonymic Catalogue of Diurnal Lepidoptera," will publish, shortly with Messrs. Gurney & Jackson, "A Synonymic Catalogue of Neuroptera Odonata," or Dragonflies. He hopes to bring out afterwards the first volume of his "Catalogue of Lepidoptera-Heterocera," a work which has engaged his attention for nearly twenty years.

AS TO FLIES.—So you want to know where the flies come from, do you, Lucullus? Well, the cyclone makes the house fly, the blacksmith makes the fire fly, the carpenter makes the saw fly, the driver makes the horse fly, the grocer makes the sand fly, the boarder makes the butter fly, and if that is not enough for you you will have to pursue your future studies in entomology alone.

PROF. ANGELO HEILPRIN found two species of butterflies buried in the snow on the glacier he discovered on the volcano of Ixtaccihuatl in Mexico. There was a snow storm the previous night and the butterflies were evidently blown up to this height (15,500 feet). The species were *Colias cæsonia* and *Terias sp.* The specimen of *Terias* was in too bad a condition to identify.

MR. PHILIP LAURENT found *Pamphila panoquin* fresh and bright on June 29th, at Anglesea, N. J. He succeeded in getting the eggs. but the larvæ would not feed on ordinary grass. There is another brood on the Atlantic coast which appears about August 22d, having been found at this time at Cape May, N. J., by Dr. Skinner. The food-plant is supposed to be marsh grass which grows in the salt meadows.

THE FIELD MEETING AT JAMESBURG, N. J.—A field meeting of the entomological societies of Brooklyn, Newark and Philadelphia, was held on July 4th at Jamesburg, N. J. The societies represented were the Feldman Collecting Club, American Entomological Society and Entomological Section of the Academy of Natural Sciences from Philadelphia, and the Entomological Societies of Brooklyn and Newark. Jamesburg is situated in the Cranberry bog region of New Jersey, and is a very interesting locality entomologically. The headquarters of the meet was a very pretty grove, from which the members spread out in various directions in search of bugs. The object of the meeting was the fostering of scientific and social intercourse among the entomologists of the three cities. The Feldman Collecting Club was represented by Messrs. J. H. B. Bland (President), Wenzel, Dr. Castle, Laurent, E. Wenzel, Boerner, Hoyer, Schmitz and Tresher, and the American Entomological Society and Entomological Section of the Academy of Natural Sciences by Mr. I. C. Martindale, Dr. G. H. Horn and Dr. H. Skinner; Brooklyn, by Messrs. Meeske, Leng, Davis, Dietz, Harbeck, Merkel, Beyer, Smith and Banks; Newark, by Messrs. Machesney, Stortz, Angelman, Loeffler, Hess, Leib and Crane. After collecting for a couple of hours a luncheon was served in the grove and a photograph taken of the party. A meeting was then called to organize permanently. Dr. George H. Horn, President of the American Entomological Society and Professor of Entomology in the University of Pennsylvania, was chosen chairman. The chair nominated the following committee to confer with their respective societies in regard to the advisability of holding an annual meet and to select the time and place. Mr. H. W. Wenzel, of the Feldman Collecting Club; Professor J. B. Smith, State Entomologist of New Jersey and Professor of Natural History in Rutgers College, for the Brooklyn Society; Mr. Machesney, of Newark, and Dr. Henry Skinner, Curator of the American Entomological Society of Philadelphia. Altogether, a very pleasant day was spent and the first meeting was a grand success.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st. The number of specimens to be limited to twelve (12) for each sending; 2d. The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society. 3d. Each specimen must have a number attached so that the identification may be announced accordingly. Such identifications as can be given will be published, according to number, in the issues of the News. Address packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa**

W. M. Hill.—1., *Sphenophorus 13-punctatus;* 2, *Hister interruptus;* 3, *Elater rubricollis;* 4, *Gastrophysa cyanea;* 5, *Chrysopila thoracica;* 6, *Languria mozardi;* 7, *Megilla maculata;* 8, *Chlænius æstivus;* 9, *Lebia grandis;* 10, 11, *Chauliangnathus marginatus;* 12, *Chlænius tomentosus.*

W. Loewenstein, Jr.—1, *Passalus cornutus;* 2, *Necrophorus americanus;* 3, *Calosoma Willcoxi;* 4, *Nyctobates pennsylvanicus;* 5, *Megalodacne fasciata;* 6, *Tenebrio tenebrioides;* 7, *Cucujus clavipes;* 8, *Catogenus rufus;* 9, *Chlænius solitarius;* 10, *Harpalus caliginosus;* 11, *Diplochila major;* 12, *Dicælus elongatus.*

## Entomological Literature.

Bulletin from the Laboratories of Natural History of the State University of Iowa contains: A Monograph of the Pselaphidæ of North America, by E. Brendel, M.D., and H. F. Wickham, vol. i, Nos. 3 and 4, June, 1890; 88 pages and 4 plates, 77 figs. Such works as these are very important, and greatly facilitate study. The authors say: "In preparing this monograph we hope to aid students of this large and interesting family, by sufficiently minute descriptions and synoptical tables, to recognize any species known to the fauna of the United States and British America, and to see the affinities of American species to the members of this family in other lands."

Contributions toward a Monograph of the Noctuidæ of Temperate North America.—Revision of some Tæniocampid Genera by John B. Smith. From Proc. U. S. National Museum vol. xii, pp. 455-496. A comparative table of genera is given, and the genera and species described Two plates and two figs. are given, showing the genital structure of the Tæniocampinæ.

Proceedings of the Boston Society of Natural History, vol. xxiv, p 482. The Life-history of *Drepana arcuata*, with remarks on certain structural features of the larva and on the supposed dimorphism of *Drepana arcuata* and *Dryopteris rosea* by Alpheus S. Packard.

Bulletin Agricultural Experiment Station of Nebraska, vol. iii, art 2. Insects Injurious to Young Trees on Tree Claims, by Lawrence Bruner, pp. 141 This essay is largely illustrated, and gives a history of the more important insects injurious to trees

Transactions Kansas Academy of Science, vol. xiii, pt. 1, 1889, p. 15. Note on the Oviposition of a Wood Borer (*Tragidion fulvipenne*) by Prof. E. A. Popenoe, p. 34. Experiments for the Artificial Dissemination of a Contagious Disease among Chinch-bugs, by Prof. F. H. Snow. Some Notes on the Mallophaga by Vernon L. Kellogg.

Proceedings and Transactions of the Natural History Society of Glasgow, vol. ii, pt. 2. Parthenogenesis in Hymenoptera by P. Cameron. A Contribution towards a Neuropterous Fauna of Ireland by James J. F. X. King.

Maryland Academy of Sciences, 1890, pp. 73–88. Observations of North American Capsidæ, with descriptions of new species, by P. R. Uhler. *Ectopiocerus*, new genus; *E. anthracinus*, n. sp.; *Teleorhinus*, new genus; *T. cyaneus*, n. sp.; *Closterocoris*, new genus; *C. ornata*, n. sp.; *Coquillettia*, new genus; *C. insignis*, n. sp.; *Xenetus regalis*, n. sp.; *X. scutellatus*, n. sp.; *Rhinocaspis*, new genus; *R. Van Duzeii*, n. sp.; *Mimoceps*, new genus; *M. insignis*, n. sp.; *M. gracilis*, n. sp.; *Macrotylus regalis*, n. sp.; *M. tristis*, n. sp.; *M. vestitus*, n. sp.

Icones Ornithopterorum.—A Monograph of the Rhopalocerous Genus Ornithoptera, pt. 2. This contains figures, descriptions, etc., of *O. richmondia*, *O. Plateni* and *Brookeana*. We regret to see this subgenus cut up into subgenera. When in time we have a genus for every species we can conveniently drop generic names.

The Entomologist, London, July, 1890.—Coleoptera collected by Mr. Pratt on the Upper Yang-Tsze, and on the borders of Tibet, by H. W. Bates. Descriptions of new species of Phytophagous Coleoptera received from Chang-Yang, China, by Martin Jacoby. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste. Two days' collecting in Normandy, by John Henry Leech. Contributions to the Entomology of the Portsmouth District, by W. T. Pearce. A successful Moth-trap, by W. M. Christy. Entomological Notes, Captures, etc. Doings of Societies.

Bulletin of the Ohio Agricultural Experiment Station, vol. i, No. 1, 1889.—Preparatory Stages of the 20-spotted Lady bird. Studies in Pond Life. 1st, On the Life-history of *Arzama obliquata;* 2d, On the Life-history of *Chauliodes rastricornis;* 3d; On the Life-history of *Listronotus latiusculus;* 4th, On the Feeding-habits of *Zaitha fluminea;* 5th, On the Feeding-habits of *Notonecta undulata;* 6th, On Aquatic Leaf beetle (*Donacia subtilis*); 7th, An Aquatic Lady-bird (*Hippodamia 13-punctata*); 8th, On the Eggs of the Giant Water Bugs (*Belostoma americanum* and *Benacus griseus*). A Partial Bibliography of Insects Affecting Clover, by Clarence M. Weed.

Proceedings of the Zoological Society of London, pt. 4, 1889.—On new Indian Lepidoptera, chiefly Heterocera, by Col. C. Swinhoe. On the Lepidoptera of Japan and Corea.—Part 3, Heterocera, Sect. 2, Noctues and Deltoides, by J. H. Leech.

TRANSACTIONS, PROCEEDINGS AND REPORT OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, vol. xii, for 1888-89. Description of a new genus and species (*Hectoria pontoni*) of Locustidæ, by J. G. O. Tepper. Further Notes on Australian COLEOPTERA, with descriptions of New Species, by Rev. T. Blackburn.

ENTOMOLOGISCHE NACHRICHTEN, vol. xvi, 10, May, 1890.—Studies on Ichneumonidæ,* by Dr. Kriechbaumer; *Ischnogaster* n. gen.

NATURALISTE CANADIEN, May, 1890.—HEMIPTERA-HOMOPTERA of Quebec; Fam. Tettigonidæ, with 1 plate and Additions and Corrections; *Deltocephalus superbus*, *D. chlamidatus*, *Thyphlocyba unica* n. sp.

NATURALISTE CANADIEN, June, 1890, gives a list of insects from the Madeleine Isles, including the following new species: *Anax maritimus* (no description), *Ichneumon magdalensis*, *Glypta tricincta*, *Eubadizon basilare*.

COMPTES-RENDUS DES SEANCES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, April 5, 1890.—Ethiopian Rhynchota,* by W. L. Distant. *Sandehana* n. gen.

COMPTE RENDU, SOCIETE ENTOMOLOGIQUE DE BELGIQUE, June 7, 1890. —Aenictus-Typhlatta, discovered by M. Wroughton, New Genera of Formicidæ,* by A. Forel. New genera: *Huberia* (type *striata* Smith), *Triglyphothrix* (type *T. Walshi* n. sp.), *Trigonogaster* (type *T. recurvispinosus* n. sp.), *Emeryia* (type *E. Wroughtonii* n. sp.), *Ophthalmopone* (type *O. Berthoudi* n. sp.). The new species are from India and South Africa.

SPECIES DES HYMENOPTERES D'EUROPE ET D'ALGERIE, E. André, 36e fascicule, July 1, 1890, pp. 493-572, of vol. iv, 4 pls. Treats of the genera *Microplitis*, *Microgaster*, *Elasmosoma* and *Agathis*.

TIJDSCHRIFT VOOR ENTOMOLOGIE (Hague), xxxii, 3d Afl., 1889.—The spiral muscle and the vesicle of the palpi of male spiders, by A. W. M. Van Hasselt, 2 plates. Systematic and Synonymic Catalogue of the Neuroptcra observed in the Low Countries and their borders, by H. Albarda. Some notes on Cidaria and other Lepidoptera, by P. C. T. Snellen.

ANNALES DE SCIENCES NATURELLES, 58e Annee, VIIe Serie, ix, 1.—Memoir on the venom and sting of the Bee, by Dr. G. Carlet, 1 pl. Zoological and anatomical monograph of the genus *Prosopistoma* Latr., by A. Vayssiere, 1 plate.

ARCHIV FUR MIKROSKOPISCHE ANATOMIE xxxv, heft 2.—The Development of the Wall Bee (*Chalicodoma muraria* Fabr.) in the Egg, by J. Carriere, 2 plates.

MEMOIRES DE LA SOCIETE ROYALE DES SCIENCES DE LIEGE, Series 2, xvi, April 1890.—Alphabetical Repertory of the specific names admitted or proposed in the subfamily Libellulinæ, with bibliographic, iconographic and geographic references, by A. P. de Borre.

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* Contains new species other than North American.

A NEW METHOD of rearing the Silk Worm (*Bombyx mori* L.) on a herbaceous plant, by Dr. C. O. Harz, Stuttgart, 1890. The plant is *Scorzonera hispanica* L.

## Doings of Societies.

PHILADELPHIA, MAY 22, 1890.—A regular meeting of the Entomological Section of the Academy of Natural Sciences was held at the Hall S. W. cor. 19th and Race Streets. Meeting called to order at 8.20 o'clock. Mr. Martindale in the chair. Members present: Ridings, Cresson and Skinner. Associates: Calvert, Fox, Westcott, Seeber, Castle and Welles. Mr. Calvert stated that he had recently caught a male specimen of *Anomalagrion hastatum* Say, for which species he had been on the lookout for three Summers. It can readily be distinguished from all others by the anomalous shape of the pterostigma of the anterior wing, which is also separated from the anterior margin. The specimen was caught in Delaware County, Pa. Mr. Seeber exhibited specimens of the rare and pretty beetle, *Buprestis ultramarina*, which he had found near Red Bank, N. J.; also a specimen of *Belostoma americanum*. Mr. Martindale called attention to some cocoons of *Callosomia promethia*, which were found on Wild Cherry, and which were peculiar and interesting on account of their very small size. The cocoons had disclosed a pair of moths which were about one-third smaller than normal specimens. He discussed their possible relation to *angulifera*, and the full sized form of the species. Mr. Welles spoke of the habits of allied species in regard to the spinning of cocoons. Dr. Skinner described a caterpillar (unknown species) collected by Mrs. J. P. Ballard, at Easton, Pa. Mr. Blake thought it might be *Ceratomia amyntor*.

JUNE 9, 1890.—Meeting called to order at 8.30 o'clock. Director Dr. G. H. Horn presiding. Members present: Martindale, Laurent, Ridings and Skinner. Associates: Calvert, Liebeck, Fox, Castle and Haimbach. The reports of the joint publication and the executive committees were read and received. The committee reported favorably on papers Nos. 237 and 238. Donations to the Library were read. Verbal communications being in order, Dr. Horn stated that he had lately been engaged on a study of the EUCNEMINÆ of Mexico and southward, the results of which were to be published in the "Biologia Centrali Americana." They are very rare, and usually but few species represented in collections. Being so rare and difficult to study, very few have attempted it. He remarked, in addition, that he had twenty-four types of Bonvouloir and all but three or four of the forty-two species known, which latter number would probably be doubled. The meeting adjourned to meet on the fourth Thursday in September.

HENRY SKINNER,
*Recorder.*

ENTOMOLOGICAL SOCIETY OF WASHINGTON.—April 3, 1890. Mr. B. E. Fernow was elected an active member of the Society.

Mr. Fox read a paper on a small group of spiders forming the subgenus *Ceratinella* of the genus *Erigone*. The subgenus includes about seventeen species distinguished by the presence of a shield on the abdomen. All the specimens were collected east of the Alleghenies by Messrs. Marx and Fox, and were found fully developed at all seasons of the year. The paper was illustrated with drawings, and a collection of the spiders was shown. Discussion followed by Messrs. Marx and Fox.

Mr. Schwarz read a paper entitled "Labeling Specimens," in which he described the systems of labeling employed in the case of entomological collections, dealing particularly with the systematic collection of the specialist. The various labels employed were described, and examples of some of them were shown. The paper called forth considerable discussion, which was participated in by Messrs. Riley, Mann, Schwarz, Marx and Fox.

MAY 1, 1890.—The committee having in charge the preparation for publication of a list of the insect fauna of the District of Columbia, made a partial report, which was discussed at length.

The name of Mr. Townsend was added to the sub-committee on Diptera, and that of Mr. Marlatt to the sub-committee on Hymenoptera.

A revision of the sub-committees will be made at the next meeting.

Mr. Townsend read a list of eighty-seven species of Heteroptera collected by him in southern Michigan, with some brief notes and dates of occurrence. One species, *Corimelæna nitiduloides* Wolff, was taken in a nest of *Formica schaufussi* Mayr.

Mr. Townsend also presented a paper on "Some Insects affecting certain Forest Trees, mostly from Michigan," recording towards a hundred Coleoptera and a few of other orders, affecting either the foliage or the sound or decaying trunks of Oak, Hickory, Elm, Beech, Linden, Butternut, Ironwood (*Carpinus*), Willow, Hazel, etc.

These papers were discussed by Messrs. Schwarz and Riley.

Mr. Dodge read a paper on Artificial Silk, describing the Count de Chardonnet's method as exhibited at the late Paris Exposition of making from cellulose a substance closely resembling silk. A detailed account of the process of manufacture was given and illustrated with a figure of the device for producing the thread, and a sample of the silk was exhibited.

Discussions followed by Messrs. Philip Walker, Riley, Amory, Austin and others.

Mr. Marx presented some "Arachnological notes," in which he discussed the comparative anatomy of the spinning glands of spiders. The relation of those to the external spinning organs or spinnerets, and the importance of both in classification were explained. Careful drawings of the parts discussed were shown.

C. L. MARLATT,
*Recording Secretary.*

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ENTOMOLOGICAL NEWS for June was mailed May 27, 1890.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

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## SOME EXPERIENCES IN LARVÆ REARING.

BY ROBERT BUNKER.

(Continued from page 110, vol. i.)

Occasionally we find a rare larva that has been stung by some saucy ichneumon fly, and if we can save it in the manner described on page 109, it will certainly be a great gain. Of course it must be done within a few days after the young worms have entered the body of their host, or it will be of no use. The inference to be drawn from this kind of treatment is that the chloroform penetrated the body of the larva and destroyed the young parasites, but was not in sufficient quantity to injure the larva.

Can the pupa of *Darapsa versicolor* remain under water two weeks without injury? The past two years I have bred this fine species from eggs found on the button bush (*Cephalanthus occidentalis*) and last year's catch of eggs was a surprise to me, because the low ground where the bushes grow was submerged for two weeks, and of course the pupa must have been under water that length of time, and yet when the proper time came around I found eggs. Some may say the eggs may have been laid by females that came from a distance, but that could hardly be, as the nearest bushes are six miles distant. Mr. Hulst has written up the life-history of this species, so I will only add that the larva vary from a maroon-brown to a light green, are very domestic in their habits and extremely interesting. *Darapsa chlœrilus* differs from the foregoing in depositing its eggs. They are sometimes laid singly and sometimes *en-masse*, I once found twenty-two in a cluster on the Azalea (*Azalea nudiflora*).

*Smerinthus myops* varies principally in the number and color of the sub-dorsal spots; some have eight, four on each side, some six, more often four, and not unfrequently two, and one specimen, a regular unique, had but one spot, and that was situated on the right side of third segment. But the climax of all was a brood of nine I raised two years ago, which were destitute of spots. I examined them very carefully, and not a vestige of a spot could be seen. These immaculate specimens were light green without the bluish tinge characteristic of most of them. The diagonal lateral lines were very indistinct. When this unique group came out winged flies I found the sexes about equally divided, and was in hopes to get a pairing and thereby ascertain whether the larva would inherit the characteristics of their progenitors, but I failed. Another characteristic of all I have bred so far is the spots were cardinal or shumach-red, instead of rust-red.

In most cases the larvæ of a species varies far more than the imago, but in *Smerinthus geminatus* the reverse seems to be the order of things, and no doubt the food-plant has something to do with it; the eggs are found on willow and on poplar. The eggs found on poplar are larger than those found on willow; the imago is proportionally larger, the shading much deeper, and on the whole a much finer insect than the willow feeders.

Many more instances of marked varieties might be mentioned, but this paper is now longer than was at first intended, and I will close by a few remarks on the larva of *Smerinthus astylus*. Last Summer, after four hours' search on the high bush huckleberry (*Vaccinium corymbosum*) I found a young worm, half an inch long, of a bright green color. It moulted three times, but supposing the species had been described, I did not make a description of it till after the last moult, which runs as follows:

Larva bright green, 2¼ inch. long, ⅜ inch. diameter, uniform in size, with seven, oblique, lateral, red lines, margined with yellow on the under side; caudal horn black, base greenish yellow, nearly straight and smooth. Head with a pea-green stripe on the side; under side below the stigmatal spots sea-green, thickly studded with very small, blue-black rings, extending the entire length of the body, and covering the upper as well as the lower part of the thorax; spiracles red.

It will be seen by the foregoing that my description differs very materially from that of Mr. Jones, and is either a marked variety or a distinct species.

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## ELEMENTARY ENTOMOLOGY.

### Fourth Paper—THE MOVABLE PARTS OF THE HEAD.

The antennæ or feelers, are jointed appendages inserted on the epicranium between or in front of the eyes. *Regular* antennæ have the joints of similar shape; *irregular* antennæ have the joints of dissimilar shape; intermediate forms of antennæ of course occur. Technical names are applied to the different forms of antennæ. Of regular antennæ the more common forms are:

*Filiform* (thread like), having the joints of uniform thickness, or nearly so.

*Setiform* or *setaceous* (bristle like), having the joints successively more and more slender from the base* of the antenna to its apex.

*Subulate* (awl shaped), similar to setaceous, but the transition from the thick basal joints to the slender joints is more abrupt.

*Moniliform* (necklace like) having the joints globular.

*Serrate* (saw like), having the joints triangular, arranged like the teeth of a saw.

*Pectinate* (comb like), each joint having a long process or projection on one side, the whole arranged like the teeth of a comb (fig. 2).

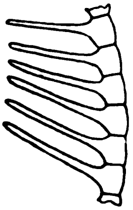

Fig. 2. Part of a pectinate antenna (*Chauliodes pectinicornis* L.).

*Pinnate* (feather like), each joint having one or more projections on each of two opposite sides, the whole looking like a feather.

Of irregular antennæ, the more common are:

*Clavate* (club shaped), having the apical joints somewhat more enlarged than the others.

*Capitate* (with a head, knobbed), having the terminal (apical) joints greatly enlarged to form a knob.

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* The base of any limb or appendage is that part by which it is attached, directly or indirectly, to the trunk, the apex is the opposite end, farthest from the trunk.

*Lamellate* (plate like), having the terminal joints extended on one side into broad plates (figs. 3 and 4).

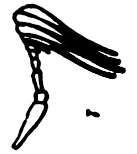

Fig. 3. A lamellate antenna (*Plecoma Ricksecheri* Horn, male).

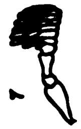

Fig. 4. A lamellate antenna (*Plecoma hirticollis* Horn, female).

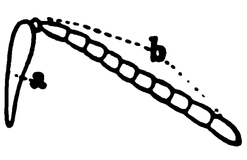

Fig. 5. An irregular antenna of a Hymenopter. *a*, scape, followed by a small joint—the pedicel; *b*, clavola, of ten joints.

An irregular antenna may often be divided into portions of a varying number of joints. In such an antenna as that shown in fig. 5 the first or basal joint is the *scape*, the second joint is the *pedicel*, all the remaining joints compose the *clavola* or *flagellum*. The clavola may itself consist of several portions (fig. 6); its apical joints may be enlarged to form the *club;* its proximal* joints may be very short and small, and are then termed *ring-joints;* between the ring-joints and the club is the *funicle*.

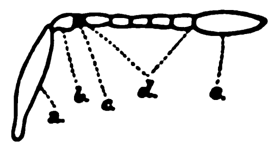

Fig. 6. Antenna of Chalcis fly. *a*, scape; *b*, pedicel; *c*, two ring-joints; *d*, funicle of five joints; *e*, club; *c*, *d* and *e* together, form the clavola.

The mouth parts or *trophi*, differ to a very great extent in the various groups of insects, so much so that Fabricius, the celebrated entomologist of the last century, founded his classification of insects almost entirely on the modifications of the *trophi*. These modifications result from the nature of the food. Many insects living on liquids, such as the nectar and honey of flowers, suck up those liquids through a tube or proboscis. Others, feeding on animal or vegetable solids require hard cutting parts to tear those solids in pieces.

But however much these modifications existing in different insects may differ from each other, there is one general, typical form and arrangement of the mouth parts, to which all the modifications may be referred. This typical arrangement is as follows:

The mouth opening is situated between the front edges of the clypeus above and the gula below. Attached to the lower (front) part of the clypeus is the *labrum* or upper lip (*c*, fig. 1†; *d*, fig. 7). To the fore part of the gula is attached the *labium* or lower lip

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* *Proximal* in treating of a limb or appendage refers to parts or joints nearest to the trunk as distinguished from *distal*, farthest from the trunk.

† Page 104 of this volume of ENTOMOLOGICAL NEWS.

(*e*, fig. 7). Between the labrum and the labium are two pairs of jaws whose normal movement is horizontal, not vertical, as in the backboned animals. The upper (dorsal) pair—nearest to the labrum—are the *mandibles* (*d*, fig. 1; *f*, fig. 7), the lower (ventral) pair are the *maxillæ* (*g*, *h*, *i*, fig. 7).

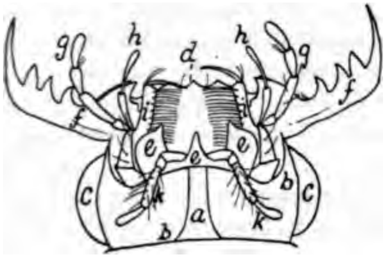

Fig. 7. Typical arrangement of mouth parts. Under side of head of Tiger-beetle (*Cicindela*).

*a*, gula; *b*, *b*, genæ; *c*, *c*, compound eyes; *d*, front margin of labrum; *e*, *e*, *e*, labium; *f*, mandible, showing four teeth; *g*, four-jointed maxillary palpus; *h*, two-jointed galea; *i*, lacinia; *k*, four-jointed labial palpus; *g*, *h* and *i*, are all parts of the maxilla.

Such a typical arrangement exists in the biting insects, as in beetles, crickets, grasshoppers, etc., and is shown in fig. 7.

The labrum usually consists of a single median piece, hinged by its hind or upper edge to the clypeus, by which it may sometimes be concealed.

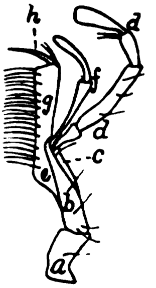

Fig. 8. Ventral side of left maxilla of Tiger-beetle (*Cicindela*).

*a*, cardo; *b*, stipes; *c*, palpifer; *d*, four-jointed maxillary palpus; *e*, subgalea; *f*, two jointed galea; *g*, lacinia; *h*, digitus. The suture between the subgalea and the lacinia is obliterated. The figure gives the galea the appearance of being attached to the stipes; its real attachment is to the subgalea, as stated in the text.

Next below the labrum are the mandibles. Usually they are one-jointed, and have a cutting edge on the inner side. This cutting edge may either be entire, *i.e.*, unbroken, or toothed.

On the ventral side of the mandibles are the maxillæ, which are usually very complicated. Each maxilla (fig. 8) consists of a number of joints. The basal joint is the *cardo* or *hinge*, the second is the *stipes* or *footstalk*. The *palpifer*, or *palpus-bearer*, is a joint situated on the outer side of the stipes; as its name indicates, it bears a conspicuous one- to six-jointed palp—the *maxillary palpus*. On the inner side of the stipes is another joint, the *subgalea*, or *helmet-bearer*. The subgalea bears two joints, the *galea*, or *helmet*, and the *lacinia*, or *blade*. The galea and lacinia are each directly attached to the subgalea. The galea is also called the *outer*, *upper*, or *superior lobe* of the maxilla, while the lacinia is the *inner*, or *inferior lobe* of the maxilla. The lacinia "is the cutting or chewing part of the maxilla and is often furnished with teeth or spines;" sometimes it bears a terminal joint—the *digitus*. As often happens in the case of other appendages, the sutures separating contiguous joints of the maxilla become obliterated and the joints unite. In such cases the maxilla appears to be composed of a less number of joints than here described. Careful comparative study alone will show where such obliterations and unions have taken place in any one insect.

Unlike the labrum, the labium, or lower lip, is quite complex. It so much resembles the maxillæ as to have received the name of *second maxillæ*. The labium is to be regarded as a pair of appendages united to each other on the middle line of the body. A comparison of fig. 8 with the right side of fig. 9, will show the correspondence between a maxilla and half the labium, the homologous parts being lettered alike in the two figures. The basal joint of the labium is the *submentum*, which articulates with the gula; it is a single median piece and corresponds to the united cardos of the right and left maxillæ. The second joint, also a single median piece is the *mentum*,* corresponding to the united stipes of the right and left maxillæ. At each outer apical angle of the mentum is the *palpiger*, the homologue of the palpifer. The palpiger bears the *labial palpus*, whose similarity to the maxillary palpus cannot be mistaken. The joint marked *e* in fig. 9 is apparently unnamed; it corresponds to the subgalea, and bears two lobes, an inner (*g*) the *glossa*, and an outer (*f*) the *paraglossa*, corresponding to the lacinia and galea respectively. Excepting the submentum, mentum and labial palpi, all the remaining parts of the labium constitute the *ligula*. Few insects have the joints of the labium so distinct as the Black Cricket (fig. 9). Thus in the labium of the

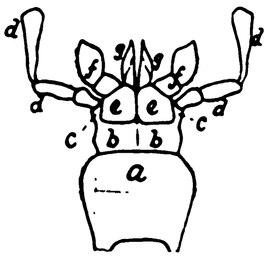

Fig. 9. Ventral side of labium of Black Cricket (*Gryllus*).

*a*, submentum; *b*, *b*, mentum; *c*, palpiger; *d*, three-jointed labial palpus; *e*, (unnamed, — subgalea); *f*, two-jointed paraglossa; *g*, glossa. The parts of the labium are here marked with the same letters as the corresponding parts in fig. 8. The mentum is one piece, but there is a line across it. The glossæ are not two-jointed, as the figure might seem to show, what looks like a terminal joint is a thin, membranous portion. The suture between each palpiger and mentum obliterated.

* Some confusion exists as to the use of the term *mentum*. By some it is applied to the part described above as the submentum, in which case that described above as the mentum receives the name of *hypoglottis*. We have followed Comstock and Packard in the text.

Tiger beetle (*e*, *e*, *e*, fig. 7) the sharp pointed middle piece (marked by the middle *e*) appears to represent the united glossæ and paraglossæ, if nothing more.

It is necessary to warn the student that great variation exists in different entomological writings, as to the names applied to the parts of the labium. The nomenclature which is here given is that of Comstock, with very slight modifications; it seems based on sound homologies with the parts of the maxillæ.

Within the cavity of the mouth may be two other organs, the *epipharynx* and the *hypopharynx*. The epipharynx is attached to the inner surface of the labrum, the hypopharynx to the inner surface of the labium; "both are rarely developed in the same insect. . . . The form and position of the hypopharynx" resemble "those of the tongue of higher animals. On this account it has been named the *lingua*, or tongue. But as both of these terms have been applied to the glossa* it is best to designate this part as the hypopharynx, and to avoid the use of the terms lingua and tongue, as liable to be ambiguous (Comstock)."

The foregoing description of the mouth parts is of that referred to above as the typical arrangement, and to be found in biting insects. In various modifications existing in sucking insects, some of the mouth parts may be represented only by bristles, or united to form a sheath. P. P. C.

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# A NEW APPLE PEST.

BY F. W. GODING, M.D., PH. D.

**Empoasca birdii** n. sp.—Seen from above long ovate, bright yellow, varying to green; abdomen deeper yellow and attenuated at the extremity. Head length of pronotum, obtusely rounded in front and convex; eyes purple-black; ocelli nearer the eyes than each other; three pale bands passing along the occiput, one at the centre and one at the edge on each side along border of the eyes. Pronotum one and a half times length of scutellum, its posterior border straight, front arched; three large, pale spots on front edge, the mesial one being continuous with the corresponding band on the occiput. Scutellum large, triangular, depressed, having a pale green, broad band on posterior part; apex and base yellow, a dark spot occupying the disc. Abdominal joints gradually decreasing in size; pure yellow. Elytra slightly smoky, with a darker band passing across the centre. Wings hyaline and iridescent, in the former the terminal vein is at the margin, while in the latter has a membranous margin; lower part of tibiæ and all of tarsi indigo-blue; femora with a row of strong spines. One specimen with all colors much deepened, and some minor differences, may prove to be distinct. Length about 2 mm.; 3 mm. to end of hemilyta; breadth one-third the length.

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* When the two glossæ alone are united into one median piece, this piece is often called the glossa.

Described from many specimens. Taken in Illinois from leaves of apple, hop, walnut, bean, and some weeds. I regret to add another to the long list of apple pests, but I am compelled to do so from observations repeated during two seasons. The specimens were taken from May until after heavy frosts. Their injuries to the apple leaves were plainly to be seen, the leaves being discolored wherever a puncture had been made. An account of its injuries appears in the Lacon. (Illinois) "Fruit Grower" vol. i, p. 132, July, 1890.

I take pleasure in dedicating this beautiful little species to my highly esteemed friend, Miss Emma Bird, who has greatly aided me in entomological work for several years.

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## WHAT CAN IT BE?

BY MRS. JULIA P. BALLARD,
Easton, Pa.

On the 12th of September, 1889, a large "mulberry" colored caterpillar was given to me. Its food-plant was not known. It was very strong and very snappish. There were two pairs of spined horns, one pair on the third and one on the fourth ring, and a strong sharp-pointed spined horn at the end. His whole length was marked by diagonal lines of the same mulberry color, but of a darker shade. These radiated from the central line down his back just like the veinings of a leaf. He was fully three inches in length, quite as large as the caterpillar of the Royal Dryocampa (*C. regalis*). No food offered him proved satisfactory. He resented the slightest disturbance with a sudden, quick motion, jerking about as if in a fury of passion, but kept quite still if not disturbed. I at once recognized him as the same kind of caterpillar I once secured nearly ten years ago.

"I saw an immense caterpillar, as I was coming up the hill, fully three if not four inches long," said a friend coming in one hot June day.

"Why didn't you bring him along?" was the quick response.

"I had no box, and I dare not touch him."

Seeing me don my hat and take up a pencil and parasol, said: "You will not find him; he'll be sure to have gotten away," was the not too encouraging remark. But, with the exact locality given (which chanced to be a large stone horse-block at a gentleman's residence, some distance away, and which of course could suggest no food-plant for his meals), I started—and to reward faith and perseverance—he was found on the identical block, captured safely, although snappish at disturbance, and after being secured in his box prison was tempted by every imaginable kind of leaf to be obtained from garden or wood. Nothing would he touch, and of course he soon died without a sign. Had he then been placed upon earth he would probably have "gone down" and become a chrysalis in his own way. At any rate, acting on this thought, the one secured last September was placed on a box of earth and was soon lost to sight, going down on the next day (September 13th). On September 18th, rolling back the earth, I found a fine large chrysalis with an unusual tinge of red in the brown. The rings were formed by two or three narrow and somewhat constricted rings; the chrysalis was broadest in the middle, and tapering to a sharp point at the end. The head has a pinched look and markings, which, as hasty dashes, give the effect of a face, two eye dashes and a horizon mouth line. From that day of September until now (April 13, 1890) he has lain so still that, but for an occasional tremor and a very occasional jerk when slightly touched, one would have said there was surely no life there. But he has moved to-day, and now all one can do by way of satisfying his curiosity is to wait a development, which cannot be far off. A line hinting of a crack down the centre of the front of the head shows where the chrysalis will break, and it is exactly like that of the Imperial Dryocampa (*E. imperialis*).

On April 21st the chrysalis responded to raps upon the box every time (and for the first time) as I have often had the Polyphemus chrysalis do by a rapid movement of the end of its body which shows me it is nearing the time of its change to the imago. Through all the past months it has lain as still as if dead, with a very occasional exception of a slight movement when touched. Ordinarily it made no response to this, and tried one's faith as to any latent life as much as the chrysalis of the Royal Walnut (*C. regalis*) does.

NOTE.—It was suggested that this might be *Ceratomia amyntor*, the four-horned sphinx, but Mrs. Ballard has reared *amyntor*, and the unknown cannot be it.—ED.

# A NEW FORM OF CABINET FOR BUTTERFLIES.

BY ISAAC C. MARTINDALE.

Having just had completed a new cabinet, which gives such good satisfaction, I am prompted to acquaint the readers of the NEWS with the manner of its construction, and its many advantages, as it is the best form I have yet seen for easy examination, study, or comparison of specimens. The case is of Walnut, and is made in two sections (thus being more portable), one fitting on top of the other, the upper having sixteen drawers and the lower one twenty-four, each drawer being 24 inches wide by 20 inches deep, and of sufficient height to admit of the use of any ordinary pin. Each drawer has also its separate compartment, this I have found much better than where they slide on runners; the drawers being all interchangeable, admit of any change of location, which so often is found necessary where one's collection is constantly receiving new accessions.

The especial feature is the drawer itself, which, instead of having a cork bottom as is usually the case, has both the top and bottom of glass; the top part of the drawer frame fits tightly over a ledge one inch in height, effectually preventing the intrusion of destructive insects, the pest of the entomologist, but it is readily lifted when it is desirable to add to the contents, or change the location of the specimens. For the inside arrangement I have taken a strip of common tin, one inch wide, and turned up each side five-sixteenths of an inch, thus leaving three-eighths of an inch for the bottom, the length of the strip of tin being about two inches longer than the width of the drawer admits of each end being turned up one inch; into this tin trough is tightly fitted a cork strip three-eighths of an inch square, the whole being covered with white paper, such as is usually used for lining drawers, conceals the inequalities of the cork, and makes a fine finish; they should be made to fit neatly in the drawer, and can be readily moved about to suit large or small specimens; for *Lycænas*, *Pamphilas*, etc., as many as fifteen of these strips may be used in one drawer, and as few as five for *Morphos*, *Caligos*, etc. The upturned ends are fastened in place by using the ordinary thumb tacks that can be procured at any stationer's; the frame work of the drawers should be of White Pine, well seasoned; into this the thumb tacks are readily inserted and as easily withdrawn when a change in the position of the cork strips is needed.

The superiority of this form of case for butterflies will be readily perceived, as the upper and under surface of the wings can be seen by simply turning the drawer without touching the insect, and there is no danger of breaking or injuring specimens. The cost of the case is no greater than if made in the old style.

——o——

## COLLECTING IN THE WILDS OF PENNSYLVANIA.

BY CHARLES A. BLAKE.

During the latter part of last July, being up in Tioga County and having a day to spare, I concluded to try that section entomologically, so, early in the morning, got my traps together and found a *native* who agreed to take me in his buggy, in which we rode to a wild spot not far from Niles Valley, and about the roughest ride I ever experienced. We halted close to a deep ravine which looked promising, and climbing down among the rocks, which here are of gigantic proportions, began my survey. The rock formation I thought belonged to the *Laurent*ian group, but not being geologist enough to determine that point with certainty, mentioned it to Prof. Heilprin on my return, who soon satisfied me that my speculations were wrong.

Passing through the ravine I came upon a beautiful little valley, which the before-mentioned native said was called *Martin dale*, on account of the vast number of swallows that congregate there, and from appearances should judge it was a paradise for the botanist. At the northern end there was a small sheet of water called Chu*b Lake*, where I captured several species of hymenoptera among the water*cress on* the shore. Not far from the edge of the water I noticed a snake-*skin ner*vously twitching, and on investigating matters, found it contained several specimens of Necrophorus americana, Silpha americana and a species of Dermestes, which I bottled. Among the débris on the shore was a curious specimen of Xyloryctes satyrus, in which the *horn* was curved forward, but I unfortunately lost it.

In a dense *wood* on the opposite side of the lake there were ant hills and ants enough to satisfy even Dr. McCook had he been there. While examining the trees for Catocalæ five or six species occurred, among them C. relicta. In this wood I noticed a large number of Libellulidæ, apparently flying around a blue*jay ne*sting in a tall *Pine* tree, and I nearly dislocated my cerv*ical vert*ebræ looking up to see what all the commotion was about. The jay appeared greatly agitated by the insects, and kept up a constant flutter and chatting. As it appears a *well es*tablished fact that the bluejay is not a strictly insectivorous bird, I could not account for its actions. Thinking to drive her from the nest I threw a stone at it, missed of course, but brought down a mass of yellow fungus that was full of Megalodacne heros, several of which I bottled.

In the neighborhood of the lake I captured specimens of Vanessa milberti, Feniseca tarquinius, Grapta J-album and Alypia octomaculata. I have never seen birds so abundant as they were in this valley, one I s*lew is* a Chordeiles virginianus, the night-hawk, the skin of which is now in my collection. The craw was literally stuffed with coleoptera, showing it was a better collector than myself.

As I had had a good day's collecting we took to our buggy again; after *riding s*ome distance a bolt broke, on account of the nice road spoken of above, and for a moment it looked as though I should lose the result of my trip, but we fortunately found a *smith* who soon put us in good shape, so that I arrived home in time for supper, and quite satisfied with my success.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

PAMPHILA AARONI was found in abundance at Cape May last month by Mr. Witmer Stone. *C. cubule* was also found.

SOMETIMES at least a quart of mosquitos could have been gathered from under each electric light on Congress Hall porch, Cape May, N. J.

POMPILUS ÆTHIOPS Cress., was seen at Westville, N. J., carrying away a species of *Trochosa* which it had evidently just captured and killed, as the spider was bright and perfect. Wasp and spider were both bottled.

A NATURALIST observes, admiringly, "There is a butterfly, one of the world's 12,000 species, the tiny eye of which contains 17,000 facets." This will explain to small boys why the butterfly is such an expert in dodging a hat.

Prof. E. W. DORAN recently resigned the office of State Entomologist of Tennessee, which he had held for five years, having recently removed to Missouri. During his incumbency he furnished two reports and a catalogue of the insects of the State. Dr. F. W. GODING.

Mr. W. H. ASHMEAD intended to sail for Europe on September 3d, steamer "Munchen," to be abroad two years. He hoped to visit the large collections of the continent and pay especial attention to parasitic HYMENOPTERA; also expected to visit Italy and make some studies on orange insects.

I LATELY reared seven specimens of the larvæ of *Terias nicippe* to the chrysalis state. Five of the chrysalids were of the normal green color, and two were black. Mr. Scudder calls attention to the same occurrence in his book on the "Butterflies of the Eastern United States." His specimens disclosed the normal form of fly. H. SKINNER.

THE last of the MSS. for part 1 of the new "Handbook of the Destructive Insects of Victoria" with 13 colored plates has been handed to the government printer, and the work was to have been completed by the end of July. The prospectus has just been issued of a new book entitled, "A Manual of New Zealand Entomology," by Mr. Geo. Vernon Hudson, Fellow of the Entomological Society of London, of Wellington, New Zealand. The work will consist of about 150 pages, and will cotain 20 colored plates, illustrating over 100 species of typical New Zealand insects.

Mr. C. W. JOHNSON took a specimen of *Neonympha Mitchellii* at Dover, Morris Co., N. J. It agrees exactly with specimens of *Mitchellii* in the collection of the American Entomological Society received from Prof. Mitchell. *N. Mitchellii* was described by Prof. French in the Canadian Entomologist for February, 1889, p. 25. The types came from Cass Co., Michigan, and were found in upland dry meadows. The country around Dover, N. J., is rocky and hilly. It seems remarkable that this species has not been noticed before if it is at all plentiful, and also more remarkable that the first additional locality should be so far away from the original. Mr. Johnson's specimen was caught July 10, 1890. H. SKINNER.

I WAS pleased to read in ENTOMOLOGICAL NEWS the article about baiting insects with sugar, molasses, or other sweets. I have followed the advice given in the Lepidopterist's Calendar, London, 1875. It is to mix two tablespoonfuls of new rum with one pint of molasses. The rum gives flavor, and is, I suppose, more diffusible than saccharine matter alone, and will no doubt serve as a night-cap to RHOPALOCERA, and as an eye-opener to HETEROCERA. You will notice many LEPIDOPTERA feeding on over-ripe fruit in which vinous fermentation has commenced. During this process much alcohol and œnanthic ether is given off, attracting butterflies, etc. Under fruit trees, with the ground covered with decaying berries, mulberries, pears, etc., you will find many, such as *Limenitis*, *Papilio*, *Grapta* and others, and to me it seems that they resort to fruit-bearing trees and bushes for their "toddy." Dr. RICHARD KUNZE.

COLIAS PHILODICE, var. *alba*.—I notice that the foot-note on p. 93. vol. 1, states that if the genitalia of my white *philodice* were examined it would probably be found to be a female. This I will venture to say was done the day it was captured, and it is a male without a doubt. I have forty specimens of *C. philodice* in my collection, including some very rare forms, but this white male seems the oddest of all. One pair (females) are of a pale lemon-yellow, and in some respects resemble the Swedish males of *C. palæno*: also yellow females without the submarginal rows of yellow spots on the upper side. Some females that are suffused with black and on the under side have a smoky-orange cast. Among the males I have a specimen that has the black border very narrow on the primaries and almost obsolete on the secondaries; this I think is var. *anthyale* of Hüb. This latter form I generally take among the Spring brood when I also find the very small specimens which seldom appear later in the season.

GEO. A. EHRMAN.

WHILE walking along the edge of a mountain stream I was surprised to see one of these butterflies (*Papilio macleyanus*) alight close to the water, into which it backed till the whole of the body and the lower part of the hind wings were submerged, the two forelegs alone retaining their hold of the dry land. After remaining in this position for something like half a minute it flew away, apparently refreshed. During the morning I noticed quite a number doing the same thing. In one instance no less than four were to be seen within a space of not more three yards, and to make sure that I was not deceived I captured several as they rose from the water, and found in each case the body and lower edge of the hind wings quite wet. While in the water the fluttering of the wings, so noticeable at other times, was suspended, and so intent were the butterflies in the enjoyment of their cold bath that they would hardly move, even when actually touched by the net. Apparently the heat of the weather drove them down to the water, as immediately they emerged they flew up again to the hillsides (GEO. LYELL, in the "Victorian Naturalist" for June, '90).

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st. The number of specimens to be limited to twelve (12) for each sending; 2d. The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society. 3d. Each specimen must have a number attached so that the identification may be announced accordingly. Such identifications as can be given will be published, according to number in the issues of the NEWS. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa

EUGENE R. FISCHER.—1, *Catocala amatrix*; 2, *Cybister fimbriolatus*; 3. *Ligyrus relictus*; 4. *Argiope cophinaria*; 5, *Spilosoma virginica*; 6. *Lygus pratensis*; 7. *Lopidea medea?*; 8. *Scarites substriatus*.

W. M. HILL.—1. *Tetraopes tetraophthalmus*; 2. *Silpha inæqualis*; 3. *Attelabus analis*, 4. *Geotrupes Balyi*; 5. *Trichius piger*; 6. *Canthon lævis*; 7. *Calopteron reticulatum*; 8. *Lachnosterna gibbosa*; 9. *Epicauta cinerea*; 10. *Epicauta strigosa*; 11. *Dineutes sp.?*

# Entomological Literature.

SECOND ANNUAL REPORT OF THE EXPERIMENT STATION KANSAS STATE AGRICULTURAL COLLEGE, p. 206. Some Insects Inj. to the Bean.

JOURNAL OF THE ASIATIC SOCIETY OF BENGAL, vol. lviii, pt. 2, Suppl. No. 1.—Catalogue of the Insecta of the Oriental region, No. 1. Order COLEOPTERA, Family CICINDELIDÆ, by E. T. Atkinson. Catalogue of Insecta 2. Order RHYNCHOTA, Sub-order HEMIPTERA-HETEROPTERA. Family CAPSIDÆ, by E. T. Atkinson, with bibliographical table, etc., 174 pp. This is an important paper to American students, as it includes the species of the world, vol. lviii, pt. 2, No. 4, 1889. On Certain Lycænidæ from Lower Tenasserim, by William Doherty, Cincinnati, U. S. A., pp. 31, pl. 1. A number of new species are described.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE xlix, heft 4, 1890.—The eye of Caterpillars and Phryganid larvæ, by O. Pankrath, 2 plates.

ZOOLOGISCHER ANZEIGER, 19 May and 2 June, 1890.—Analytical Chemical Researches on living caterpillars, pupæ and butterflies, and on their secretions, by F. Urech.

THE VICTORIAN NATURALIST June, 1890.—Some Notes on the Transformations of Australian LEPIDOPTERA, by Hy. Edwards.

TRANSACTIONS AND PROCEEDINGS OF THE NEW ZEALAND INSTITUTE, vol. xxii, 1889.—Further notes on Coccididæ, with descriptions of new species from Australia, Fiji and New Zealand, by W. M. Maskell. On some species of Psyllidæ in New Zealand, by W. M. Maskell. On some Aleurodidæ from New Zealand and Fiji, by W. M. Maskell. An entomological tour on the table-land of Mt. Arthur, by G. V. Hudson. *Eristalis tenax* and *Musca vomitoria* in New Zealand, by G. V. Hudson. Descriptions of New Zealand LEPIDOPTERA, by E. Meyrick. Notes on a collection of Pselaphaidæ from the neighborhood of Clevedon, southern Wairoa, by Capt. T. Brown. Description of a new species of *Argiope* from Fiji, by A. T. Urquhart. On two species of *Aranea* new to science from the Jenolan Caves, New South Wales, by A. T. Urquhart. Description of new species of Araneidæ, by A. T. Urquhart. Description of new species of New Zealand Araneæ with notes on their habits, by P. Goyen. On the occurrence of the Black Vine-weevil (*Otiorhynchus sulcatus*) in Nelson, by R. I. Kingsley.

JOURNAL OF THE BOMBAY NATURAL HISTORY SOCIETY, vol. v, No. 1.—The Butterflies of the Central Provinces, by J. A. B. A Preliminary List of the Butterflies of Mysore, by E. Y. Watson. Notes on Indian Ants, by George Alexander. J. Rothney. vol. v, No. 2. Description of a new Morphid Butterfly from Northeastern India, by Lionel de Niceville. Butterflies of the Central Provinces, by J. A. Betham (continued).

A Monograph of Oriental Cicadidæ, by W. L. Distant. Part 3, pp. 49-72. With two plates. June, 1890. Contains descriptions and figures of species of *Cosmopsaltria* and *Pomponis*.

The Victorian Naturalist, July, 1890.—Notes on the Geographical Distribution of some Australian Buprestidæ, Pt. 1, by C. French.

Catalogue of Insects found in New Jersey, by John B. Smith. From the Final Report of the State Geologist, vol. 11. This makes a large volume of 486 pages and covers all the orders. The catalogue has been compiled from all available sources, and names of species not actually recorded from the State, but supposed to be found there are inserted. It is an open question whether this should have been done: 6098 species are listed, Coleoptera coming first, with 2227: Lepidoptera next, with 1140, and Hymenoptera third, with 1074. The other orders have comparatively fewer species recorded, not because they do not exist in the State, but because they have not received the attention they deserve from entomologists. The list can't fail to be useful to both the field worker and the systematist.

Contribution Toward a Monograph of the Insects of the Lepidopterous Family Noctuidæ of Temperate North America.—Revision of the species of the genus Agrotis, by John B. Smith. The above is Bulletin No. 38, United States National Museum, 231 pages, 5 plates, 83 figures. The old genus Agrotis is divided into sixteen genera and many of these subdivided into convenient groups. Descriptions of the species with habitat and notes are given and a number of new ones described.

Biologia Centrali-Americana. Part 86, June, 1890.—Arachnida-Acaridea, by Otto Stoll (pl. xv, Coleoptera, vol. ii, pt. 1, by D. Sharp (pl. 10), vol. iv, pt. 2, by G. C. Champion (pp. 161-184); vol. vi, pt. supplement, by M. Jacoby (pp. 185-200); Hymenoptera, vol. ii, by P. Cameron (pp. 89-96, pl. 6); Lepidoptera-Heterocera, vol. 1, by H. Druce (417 424); Diptera, vol. ii, by F. M. van der Wulp (pp. 145 176, pl. 4).

The Colors of Animals, their Meaning and Use, Especially Considered in the case of Insects, by Edward Bagnall Poulton, M.A., F.R.S. International Scientific Series, by D. Appleton & Co., New York, 339 pages, illustrated. This is a very interesting work to the entomologist, and should be in every library. Some of the subjects treated are the Physical Causes of Animal Colors, Protective Resemblance, Dimorphism, Warning Colors, Protective Mimicry, Sexual Coloring, etc.

American Spiders and their Spinning-work.—A Natural History of the Orbweaving Spiders of the United States with Special Regard to their Industry and Habits, by Henry C. McCook, D.D., vol. ii. This fine volume is handsomely illustrated with five colored plates and 401 cuts, and consists of 469 pages. Dr. McCook is to be congratulated on this grand addition to spider literature.

The Entomologist, September, 1890.—Additions to the British List of Deltoids. Pyralides and Crambi, since 1859 (with plates), by Richard South. Notes on some species of Gall-gnats (Cecidomyiæ), by T. D. A. Cockerell. Contributions to the Chemistry of Insect Colors, by T. H. Perry Coste. An addition to the Plusiidæ of Britain, by R. South. Five Days' Collecting in Normandy, by J. H. Leech. Entomological Notes, Captures, etc. Doings of Societies.

Second Annual Report of the South Carolina Experiment Stations for 1889. Ten pages are devoted to Entomology, by Ellison A. Smyth, Jr., botanist and entomologist.

Verhandlungen der k. k. zool.-bot. Gesellschaft in Wien, xl, 2 Quartal. June, 1890. On the connecting links between the orthorraphic and cyclorrhaphic Diptera and those between Syrphidæ and Muscariæ, by Dr. Fr. Brauer. On Lorrainian Gall Flies,* by J. J. Kieffer. Explanation of J. C. Savigny's plates of Orthoptera in the "Description de l'Egypte," by Dr. H. Krauss. On the adaptation of the colors of butterflies and caterpillars to their surroundings, and on the character of the Lepidopterous fauna of the Kilima-Ndjaro district in East Africa, by A. Rogenhofer, etc.

Compt. Rendu. Societe Entomologique de Belgique, July 5, 1890.—Causeries Odonatologiques, by E. de Selys-Longchamps; reviews Dr. Hagen's recent synopses of *Calopteryx* and *Anax*, with a note on some of the American *Mecistogasters*. A new type of underground Prionid, by A. Lameere: *Geoprionus* n. gen., type *G. syntheticus* n. sp., Rio Brazil.

Verhandlungen des Naturforschenden Vereines in Brunn, xxvii, 1888 (Brünn, 1889).—The Lepidoptera of the Achal-Tekke District, by H. Th. Christoph: a bibliographical and geographical list of the species from this district of Turkestan. Identification of the European Coleoptera. Family Phalacridæ,* by C. Flach, 1 pl. An entomological excursion from Brünn to the borders of Transylvania in June, 1888, by Dr. A. Fleischer, with a list of Coleoptera* then collected. Coleopterological Results (of the expedition in Transcaspia in 1886 and 1887, conducted by Dr. G. Radde, Dr. A. Walter and A. Konchin) by E. Reitter;* *Microjulistus*, *Colposcythis*, *Anidania*, *Adoxinia*, new genera.

Le Naturliste (Paris), Aug. 1 and other numbers, 1890. New lepidoptera from Ecuador are described by P. Dognin.

Anatomischer Anzeiger, July 19, 1890.—Is the Ommatidium a Hair-bearing sense Bud? by William Patten.

Bulletin de la Societe Philomathique de Paris, 8e serie, ii, 1890. Note on the lyriform organs of Arachnids. Note on the anatomical structure of the pecten of scorpions and the coxal *raquettes* of the Galeodæ. Note on the movement of the limbs and jointed hairs in the Arthropoda, by P. Gaubert.

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* **Contains new species other than North American.**

JAHRESHEFTE DES VEREINS FUR VATERLANDISCHE NATURKUNDE IN WURTEMBERG, xlvi, 1890.—The fly *Teichomyza fusca* Marx., and The odor-producing apparatus in butterflies, by Dr. E. Hofmann.

DEUTSCHE ENTOMOLOGISCHE ZEITUNG, 1890, heft 1.—Contains papers on the COLEOPTERA, describing many new species, but none from North America, except *Veturius sinuatocollis* Kuwert, Costa Rica. Some of the chief papers are some new Passalidæ A. Kuwert (*Paxilloides* n. gen.). New analytical synopsis of the genus *Omoplus* E. Reitter (*Omophlina, Heliosthræma* n. gen.). Analytical revision of the genus *Amphicoma* E. Reitter. New Coleoptera from Europa, the bordering countries and Siberia, with remarks on known species, by E. Reitter, etc.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, August, 1890.—Notes on the Thysanoura, iii. On some new, or little known species collected at Croisic, by R. Moniez.

ATTI DELLA SOCIETA ITALIANA DI SCIENZE NATURALI, xxxii, Milan, 1889.—Study on the structure and function of the organs adhering to the tarsi of Coleoptera, by P. Paolo, 4 plates.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Aug. 2, 1890. —On the unity of origin of the Arthropod Type, by A. Lameere.

ZOOLOGISCHER ANZEIGER, Aug. 4. 1890.—On the developmental history of *Platygaster instricator* L. (*femorator* Dalm.) by N. Kulagin.

ZOOLOGISCHE JAHRBUCHER, v, heft 2, 1890.—General Biology of Butterflies, by Dr. A. Seitz; the first part only is published now, and treats of the geographical distribution of butterflies and their dependence on climatic influences. Contribution to the knowledge of the West African Orthoptera,* by Dr. H. Krauss, 1 pl.

COMPTE RENDU. CONGRES INTERNATIONAL DE ZOOLOGIE A PARIS, 1889-1890.—On the artificial importation of parasites and natural enemies of noxious insects in vegetation, by C. V. Riley.

ACTES DE LA SOCIETE LINNEENNE DE BORDEAUX, xlii.—Study on the species of Avicularidæ which inhabit the north of Africa.* Revision of the Avicularidæ of the republic of Ecuador.* Descriptions of new African species of the family Avicularidæ,* by E. Simon. A number of new genera are characterized in these three papers.

BULLETIN DE LA SOCIETE D'ETUDES SCIENTIFIQUES D'ANGERS. New series, xviii. Catalogue of the COLEOPTERA of Maine-et-Loire, 2d part, by M. Gallois.

NOUVELLES ARCHIVES DU MUSEUM D'HISTOIRE NATURELLE, 3d series, i, fasc. 1-17, 18-36. Paris, 1889. Researches on the insects of Patagonia, collected by the In. expedition sent to observe the transit of Venus at Santa Cruz, Patagonia, in 1882, by E. Lebrun, L. Fairmaire and P. Mabille. Includes the Coleoptera and Lepidoptera, 3 plates.

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* Contains new species other than North American.

SOCIETE D'HISTOIRE NATURELLE DE TOULOUSE, xxiii, 1889.—Materials contributing to the entomological fauna of the south of France—Hemiptera, by M. Marquet.

TERMESZETRAJZI FUZETEK (Budapest), xiii, 1890.—Contributions to the distributions of Galls, with particular regard to the neighborhood of Budapest, v, Szepligeti.

ZOOLOGISCHER ANZEIGER, Aug. 18, 1890.—On the hermaphroditic function of the Sexual Glands of the male of *Phyllodromia* (*Blatta* L.) *germanica*, by R. Heymons.

ENTOMOLOGISCHE NACHRICHTEN, xvi, No. 14, July, 1890.—On Dimorphism and Mimicry in Butterflies, by L. Glaser.

No. 15, August, 1890. —New species of Apidæ, by A. Schletterer, mostly from Chili.

No. 16, August, 1890.—Three papers on the Coleopterous genus *Athous* and its allies,* by E. Reitter. *Elathous* n. gen.

## Doings of Societies.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, June 5, 1890.—Mr. Ashmead, under general notes, announced the discovery of a genus of Proctotrupidæ new to the United States. The insect *Iphitrachelus americanus* is interesting as furnishing a connecting form between the subfamilies Ceraphroninæ and Platygasterinæ.

Mr. Schwarz exhibited a specimen of *Throscus pugnax*, which species is new to the fauna of the District.

Prof. Riley presented a paper "On the Difficulty of dealing with Lachnosterna," in which he described the attacks of those beetles on certain large trees, especially Chestnut and Swamp Oak, having a height of about thirty feet which had been transplanted to his grounds last February. The successive appearance and work of the several species of Lachnosterna were described and the experiments with remedies detailed. The latter consisted in spraying with strong whale oil and tobacco soap solution, and later with London Purple at the rates of one pound to 125 gallons of water. The applications were satisfactorily made, but proved ineffective. The first did not prevent the attacks of the beetles at all, and while the second resulted in the poisoning of many of the beetles as indicated by the finding of dead ones on the ground, it was of little value in limiting the onslaught. Prof. Riley deduced from his experiments that it was practically impossible to protect large trees from Lachnosterna. It was shown also that the beetles came from the ground near the trees, and appear to have a predilection for newly transplanted trees. The injury consisted in the gnawing off of the leaves at the base of the petiole.

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* Contains new species other than North American.

The paper was discussed by Messrs. Fernow, Riley, Schwarz, Howard and Mann.

In a paper entitled "Notes on Xyleborus," Mr. Schwarz commented upon the discovery of a wild food-plant of *Xyleborus dispar* (*pyri*). This Scolytid had been found quite recently in the vicinity boring and ovipositing in young shoots of *Liriodendron tulipiferum*. In the same branches another species, *X. tachygraphus*, was discovered, and Mr. Schwarz exhibited and described its galleries. Discussion followed by Messrs. Riley, Schwarz, Ashmead and Fernow.

Mr. Howard read a paper entitled, "The Habits of Eurytoma," in which he called attention to the fact that heretofore the generally-surmised parasitic habit of the members of this genus had never been conclusively shown; and the close relationship of *Eurytoma* with the Phytophagic genus *Isosoma* would lead to the inference that the former might be, in part at least, inquilines and not true parasites. The following of a certain species from the larval stage to the pupal, in which they were at once recognized as a species of *Eurytoma*,* settled in one instance at least the question of larval habit. An Oak gall, *Cynips Quercus-prunus*, was found, on cutting it open May 17th, to contain six full grown parasitic larvæ, afterwards determined as given above, and the remains of a larva which they had nearly devoured.

The paper was discussed by Messrs. Riley, Howard and Ashmead.

C. L. MARLATT,
*Recording Secretary.*

DESCRIPTION OF THE LARVA OF GORTYNA NITELA GUEN. AND ITS VARIETY NEBRIS.—Length full grown 1¼ inches. Uniform pale honey-yellow. Head dark honey-yellow, shining, bearing a few scattered, erect hairs. Mouth parts and a small spot on cheeks castaneous. Dorsal surface of second segment pale brown, shining, shaded laterally with blackish brown. Feet and stigmata black; segments three to eleven each with four brownish gray spots on the dorsum, the anterior larger and closer together than the posterior; each spot bearing a single erect hair; the twelfth segment having four quadrate spots of the same color, larger than the rest. A brownish gray spot just behind each stigma. Posterior segment slightly rugose, dark honey-yellow, margined with brownish black; bases of anal prolegs pale brown. Feeds in the stems of the great rag weed (*Ambrosia trifida*) and burdock (*Arctium lappa*). The larvæ went down July 30th, and the imagos emerged August 28th.

Two broods raised this season by my friend, P. Stephens, Montgomery County, exhibit both forms about evenly divided.—C. A. B.

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* The imagos obtained later proved to be *Eurytoma prunicola* Walsh.

ENTOMOLOGICAL NEWS for September was mailed August 28, 1890.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. NOVEMBER, 1890. No. 9.

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# Three new species of Aculeate Hymenoptera.

BY WILLIAM J. FOX.

**Sphex (Isodontia) macrocephalus** n. sp.

♀.—Black; head large, subquadrate, covered with long, erect, black hairs, sparsely punctured, more closely so on the face and clypeus; clypeus carinated; labrum and mandibles smooth and shining, the former rounded in front, with a slight pit on each side of the slight carina anteriorly. Thorax finely punctured, covered with long, erect, black hairs; disc with a distinct impressed line, extending from base to centre, scutellum not closely punctured; tegulæ smooth, impunctured; legs shining, posterior surface of hind tibiæ with sericeous pile. Wings blue-black, shining, the marginal cell with the tip obtuse, the third submarginal rounded at tip. Petiole finely, but not closely punctured; with long, erect hairs; the remaining segments of the abdomen smooth, shining, with a few scattered, punctured beneath, and last segment with a few scattered hairs. Length .80 inch.

One specimen. Collected in Fairmount Park, Philadelphia, Pa., during 1889.

**Miscophus americanus** n. sp.

♀.—Black; face, cheeks and thorax covered with silvery pile, very dense on the clypeus and sides of the thorax; head wider than the thorax, very finely and closely punctured, a distinct longitudinal impressed line, extending from lower ocellus almost to base of clypeus; clypeus divided into three parts, the latter rounded in front, the central part largest; thorax very finely punctured; the tegulæ slightly brownish, impunctured; metathorax with slightly heavier punctures, with a well defined, raised, central line extending from base to apex; legs sparsely covered with silvery pile, more dense on the tarsi; wings hyaline, the anterior pair with a darker apical margin iridescent; marginal cell rounded beneath, acuminate at tip, the second recurrent nervure received by the second submarginal cell near its apex; abdomen smooth and shining, very finely punctured, the apical margins of the first to fourth segment above with silvery pile, more dense laterally, beneath, the second and third segments with sparse, sericeous pile, more obvious on the posterior margins, venter with a few long, black hairs. Length .18 inch.

One specimen. Camden County, N. J., July 29, 1890.

This is the first species of this genus known to occur in North America, and should be placed in the Larridæ, after the genus *Pison*. It can be distinguished by possessing only two submarginal cells.

**Photopsis Cressoni** n. sp.

♂.—Black; clothed with long, erect, pale hair; head finely punctured; thorax distinctly punctured, much more strongly and deeper on the dorsulum and scutellum; metathorax with very large, deep punctures; subtruncate behind; wings fuscous, nearly hyaline at base, iridescent in certain lights, first recurrent nervure received by the second submarginal cell, between its base and middle, subcostal nervure incurved, so that it touches the costal nervure; nervures and stigma black, the latter and the costal and subcostal nervures very much so; abdomen shining, finely, but not closely punctured, the second segment contracted at apex, beneath the second segment is deeply punctured, the third to seventh ventral segments almost entirely smooth, polished. Length .25 inch.

One specimen. Camden County, N. J., Sept. 9, 1890.

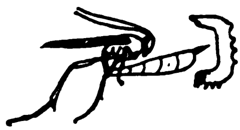
This species is, I believe, the first known to have been captured in the eastern United States, and can be at once distinguished by its entirely black color. It belongs to Blake's Division II, having two submarginal cells, and the first segment of abdomen being nearly sessile with the second.

It gives me great pleasure to dedicate this species to Mr. E. T. Cresson, whose labors have done much to advance the study of the North American Hymenoptera.

## OVIPOSITION OF ANOMALON sp.*

BY C. P. GILLETTE.

While passing an apple tree on August 18th, last, on which were a brood of *Datana ministra* larvæ about one-third grown, my attention was attracted by the presence of a large hymenopterous parasite busily ovipositing in their soft bodies, and, apparently, much to their discomfort. The parasite, was a large black Anomalon sp. not in my collection, unless, possibly, it is a variety of *A. pallitarse* Cress. It differs from Cresson's description of this species by having its middle and hind pairs of legs black, and its face, antennæ and front pair of legs entirely yellow.



This parasite was so intent upon her work that she did not leave when I pulled the limb down close to my face so that I could distinctly watch operations. The entire brood of larvæ were apparently alarmed and were striking their heads violently from side to side to frighten away their enemy. The parasite stood upon a leaf in easy reach of a number of her victims watching their movements, and, as soon as one became quiet enough, she would quickly thrust it with her sharp ovipositor. The manner in which this was done was what especially interested me. I had supposed that these parasites would stand upon or above their victims and thrust down upon them, but such was not her manner. I was reminded of one who fences, and, with a quick thrust straight in front, pierces his combatant. This insect stood upon her two back pairs of legs, the front pair not being put to any use. The long abdomen was bent under the thorax and between the legs, and the thrusts were made straight in front of the face. As the abdomen was brought forward the short ovipositor pointed straight in front like the index finger. See illustration.

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* Read before the Iowa Academy of Science, at Des Moines, Sept. 5, 1890.

The larvæ when pierced did not drop to the ground, but threw their heads higher in the air and ejected a dark colored liquid. So far as I saw but one egg was deposited in each.

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# ELEMENTARY ENTOMOLOGY.

## Fifth Paper.—THE THORAX, THE LEGS.

The second region of an insect's (imago's) body is the thorax. To it are usually attached three pairs of legs and two pairs of wings. It is composed of three segments. The first segment, articulating with the occiput in front, is the *prothorax*, which bears the first pair of legs. The second segment is the *mesothorax*, bearing the second pair of legs and the first pair of wings. The third segment is the *metathorax*, bearing the third pair of legs and the second pair of wings.

Typically, each segment of the thorax consists primarily of four parts, a dorsal part (*tergum* or *notum*), a ventral part (*sternum*), and on each side, between the tergum and the sternum, a *pleurum*.*

The prefixes *pro-*, *meso-* and *meta-* are used before *notum* and *sternum* to denote the notum and sternum of the prothorax, mesothorax and metathorax respectively.

"The tergum of each thoracic segment is composed typically of four sclerites. These are arranged in a linear series. They are named, beginning with the first or most cephalic, *præscutum*, *scutum*, *scutellum* and *post-scutellum*. In the prothorax the sutures between these four sclerites are in many cases obsolete, the pronotum appearing to be composed of a single sclerite. In beetles and bugs the scutellum of the mesothorax is usually quite conspicuous, appearing as a more or less nearly triangular piece between the first pair of wings at their base. Most entomological

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* Tergum, sternum and pleurum, with their adjectives tergal, sternal and pleural are sometimes used to denote respectively the dorsal, ventral and lateral parts of the entire body of an insect. In such cases the terms *tergite*, *sternite* and *pleurite*, are applied to the dorsal, ventral and lateral parts of each segment.

writers refer to this sclerite as *the* scutellum. Of the four sclerites which compose the tergal portion of each thoracic segment, the scutum is usually the largest; the scutellum is the second in importance; while the præscutum and the post-scutellum are frequently but little developed" (Comstock)

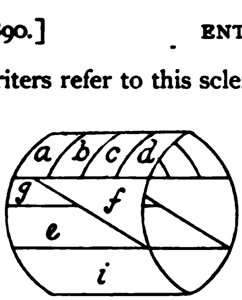

**Fig. 10. Diagram of a thoracic segment (after Comstock).**

*a*, præscutum; *b*, scutum; *c*, scutellum; *d*, post scutellum; *e*, episternum; *f*, epimeron; *g*, parapteron; *i*, sternum; *a*, *b*, *c* and *d*, taken together form the tergum; *e*, *f* and *g*, taken together form the pleurum.

The sternum consists of but one sclerite.

The sclerites of the pleurum are the ***episternum*** and the ***epimeron***, and sometimes a third, the ***parapteron***. Their position is shown in fig. 10. The parapteron in different groups of insects has also been called the ***tegula***, ***scapula*** and ***patagium***. The thoracic ***spiracles****** pierce a small piece of the pleurum called the ***peritreme***.

Attached to the thorax are the organs of locomotion—the legs and the wings.

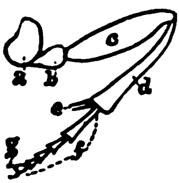

**Fig. 11. Leg of an insect.**

*a*, coxa; *b*, trochanter; *c*, femur; *d*, tibia; *e*, tibial spurs; *f*, tarsus of five joints; *g*, tarsal nails.

The leg, or the foot of an insect, as it is indifferently called, consists of five parts, the *coxa*, *trochanter*, *femur*, *tibia* and *tarsus*. The coxa, or hip joint, is the basal part, and is attached to its thoracic segment near the lateral border of the sternum, sometimes so firmly as to be immovable. A small sclerite is sometimes found between the coxa and the epimeron, called the *trochantin*. The trochanter is between the coxa and the femur, or thigh. The fourth part is the tibia, or shank, and the terminal or fifth part is the tarsus, consisting of from one to six joints. Usually the leg of an insect is armed with spines, or clothed with hairs. The spines at the apex of the tibia are usually longer than the others, and receive the distinctive name of *tibial spines*, or *tibial spurs*. The last joint of the tarsus bears one or two *tarsal claws*, *nails*, or *unguiculi*. On the ventral surface of the joints of the tarsus are often "cushions of short hair or of membrane, capable of inflation, or concave plates, which act so as to produce a vacuum and thus enable the insect to walk on the lower surface of objects (Comstock)." These cushions are termed *pulvilli*, or *onychii*. The pulvillus of the last joint very often projects so as to appear between the tarsal claws; it is *the* pulvillus. When, as sometimes is the case, the last tarsal joint has two pulvilli, one under each claw, there may be between them a third piece of similar structure —the *empodium*.

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* See page 71 of this volume of ENTOMOLOGICAL NEWS

The first pair of legs is directed forwards, the other two pairs backwards. The first pair of legs is sometimes aborted, in which case the second pair is directed forwards.

The true, or thoracic legs, may or may not exist in the larva. When they do exist they are jointed. False, or abdominal legs, are found both in larvæ and imagos, and will be referred to in treating of the abdomen. P. P. C.

# ENTOMOLOGY AT LONGPORT, N. J.

BY JOHN HAMILTON, M.D.

Longport is on the southern end of the island on which Atlantic City is situate, from which it is distant about six miles. This part of the island is narrow, and the space between the ocean and the bay is a succession of sandhills without any extensive salt marshes. The sides of many of these dunes and intervening depressions support an interesting flora, much of which is strictly maritime, and blooms during this month, attracting several species of Lepidoptera and many beautiful Hymenoptera. The native species of Coleoptera are few in comparison with the number on Brigantine Beach, where there are extensive salt meadows, and where I could have taken two hundred or more species with no more labor than was expended in collecting the forty-seven at Longport. The species not formerly taken at Brigantine, for which see Smith's Catalogue of the Insects of New Jersey—were *Cicindela marginata* Fab., which was somewhat abundant among the sand-hills with *repanda* and *hirticollis;* two forms of *Cercyon* occurring together in great numbers in and under decaying sea-grass deposited on sandy places by the bay tide, one of which, on comparison with Swedish specimens, seems to be *C. littorale* Gyll., and the other apparently only differing by having the apex of the elytra pale; *Xantholinus pusillus* Sachse, which greatly resembles an undescribed maritime species from Florida, but which, like *emmesus*, has only five punctures in the dorsal series of the thorax; and *Geotrupes Horni* Blanch., dug from holes under mushrooms on the main land. Several examples of *Euphoria areata* Fab. were taken on the wing among the sand-hills on the 9th, 10th and 11th, but none afterward.

The Lepidoptera and Orthoptera are the same as on Brigantine, but here seems to be a metropolis of the larger aculeate Hymenoptera—Apidæ, Andrenidæ, Vespidæ, Sphecidæ, etc., but not having studied this order much, I know few of the species. Inspired with a sudden interest by reason of their great variety, activity and beauty, I collected them one sunny afternoon, and found I had twenty-seven species from one-half to two inches in length—a beautiful collection. Stung? Of course I got stung; in fact, I was stung, I think, at least once by every species collected, but the fascination of capturing such charming creatures is so great one does not greatly mind this after the first three or four stings, as the sensibility of the thumb and finger of the hand used in transferring them from the net to the bottle becomes greatly obtused. The sensation produced by the sting of each species is mostly appreciatively different, so much so, that with a little experimenting, without seeing them, their differentiation might not be difficult. The sting of such species as use this organ merely defensively causes simply pain in varying degrees, while that of such as use it in addition in the capture of prey, produces, after the momentary pain of the thrust, a numbness more or less paralizing to the hand, and often lasting a whole day. To this class belongs the beautiful *Mutilla occidentalis*, whose sting is near half an inch in length, and the feeling it causes so painful and persistently benumbing that, I confess, I would not care to come in contact with it at close intervals.

Unlike the honey bee, these insects never leave a sting in the wound, and the same individual can use this weapon any desired number of times, an accomplishment that might be of some practical use in case stinging should be adopted as a remedial measure in Legitimate Medicine, as is quite possible. The honey bee has often been used by empirics with good results, it is claimed, in the treatment of rheumatism, neuralgia, forms of local paralysis and various diseases, and cases have lately been reported in medical journals by legitimate practitioners to the same effect, but the honey bee might not be the most efficacious; in fact, each species may be possessed of a different potentiality and better adapted to the treatment of one disease than to that of another, which might be readily determined by a little empirical experimenting, and quite probably the greatest remedial virtues would be found in the species producing numb and paralyzing effects.

Treatment of this kind can best be conducted in a hospital, and as Hymenoptera of the most desirable species are abundant in many places on the coast and easily cultivated, the establishment there of an enkentric sanitarium is not a future improbability, and in connection with pure ocean air, hot or cold sea-water baths and other adjuvants, could scarcely be else than meritoriously popular.

# DESCRIPTION OF THE PREPARATORY STAGES OF DATANA CONTRACTA Walker.

BY WM. BEUTENMULLER.

EGG.—Same as that of *Datana ministra* Dr. Laid in masses of twenty-five to fifty, on the underside of leaf.

YOUNG LARVA.—I have made no record of this stage.

AFTER FIRST MOULT.—Head jet-black, shining, as is also the cervical shield. Body brown, with four very pale yellow stripes along each side and three beneath. Abdominal legs dull orange with darker bands. Thoracic feet and anal clasps and plates jet-black.

AFTER SECOND MOULT.—Appearance yellow. Head same as in the previous moult. Body more reddish brown, also the cervical shield. The stripes are comparatively broad, the space between being somewhat narrower. The feet are also reddish brown, also the tips of the abdominal legs.

AFTER THIRD MOULT.—Head and cervical shield jet-black, shining. Body color pitchy brown, covered sparsely with sordid white hairs. The stripes are now sordid white and equidistant, and as broad as the intervening spaces, except the dorsal space, which is the widest. Body beneath concolorous to the above, with the three stripes much narrower than the intervening spaces. On the 4th, 5th, 10th and 11th segments are two reddish brown patches. Abdominal legs reddish brown with black corneous bands. Thoracic feet and anal clasp jet-black. Length 30 mm.

AFTER FOURTH MOULT—*Mature Larva.*—The cervical shield now becomes orange-yellow and the stripes creamy-white, otherwise the same as in the previous stage. Length when full grown 55 mm.

FOOD PLANTS.—Various species of Oaks (*Quercus*) Chestnut (*Castania*) and Hickory (*Hickoria*). Single brooded.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

**In the future all papers received for publication in the News will be printed according to date of reception.**

**NOTICE.**—Those who wish to continue their subscriptions to **Entomological News** for the coming year, will please indicate their desire to the Treasurer (see second page of cover) **before** January 1st, next. The price will be the same—**One Dollar.** We hope to make volume 2 even better than 1, and trust that our readers will do what they can to help us do so.—ED.

THE following four species of Pompilidæ were captured in the act of carrying off spiders during the last season, viz.: *Pompilus æthiops* Cr., *biguttatus* Fab., *marginatus* Say, *Priocnemis pomilius* Cr.—W. J. FOX.

WE have received from Mr. Wiley, of Miles City, Mont., a fine photograph of what is supposed to be the larva of *Coloradia pandora* Blake. The caterpillar was found feeding on sage brush. Mr. Wiley describes it as follows: Mature larva.—Color all black, spines shiny and sting the hand like *Hyperchiria io.* Pupa somewhat resembles *io*, but smaller, and not so robust. Pupa nearly black. Pupa rotted.

THE second annual meeting of the Association of Official Economic Entomologists will be held at the University Buildings, Champaign, Ill., November 11th to 15th, proximo, at the same time and place as the meeting of the Association of Agricultural Colleges and Experiment Stations. The committee on Entomology of the latter association will meet at the same time. Members expecting to attend will confer a favor upon the officers if they will announce the fact, and will send titles of papers to be read, or topics they desire discussed, to the Secretary. All are earnestly urged to be present if possible.—J. B. SMITH, Sec., New Brunswick, N. J.

ALLOW me to call your attention to an error which appeared in ENTOMOLOGICAL NEWS for May, and which I think is worth correcting. The *Erebia* which Mr. J. D. Evans collected at Sudbury, in 1889, was not *episodea*, but *discoidalis*, a much rarer species, and hitherto only taken many degrees further North. Mr. Evans took five specimens in all, and all on the same day, and one or two were also taken by Dr. E. D. Peters, Jr. I have recently heard from Mr. Evans in reference to his collecting during the past season, but no specimens of this interesting species were obtained there this year. H. H. LYMAN.

I DESIRE to state in regard to my own observations of the cocoons of *Callosomia angulifera*, that during the Winter of 1889-90, I collected, on the Catawissa Mountain at an altitude of 1800 feet, 77 cocoons of what I supposed to be *C. promethea*, all of which were suspended on Sassafras and Wild Cherry by a silken cord covering the foot-stalk of the leaf and firmly attached to the twig. Of these 12 did not hatch; from 29 there emerged ichneumon parasites, and from the remaining 36 I succeeded in obtaining 27 *promethea* and 9 *angulifera*, all females. I never looked for or found a cocoon of *angulifera* on the ground. STEPHEN BALDY,
Catawissa, Pa.

DRAGONFLIES CONGREGATING AT NIGHT.—Prof. D. S. Kellicott, of the Ohio State University, Columbus, O., writes, in a letter of Sept. 16, 1890, "In your observations of Dragonflies, have you found them congregating at night? In July last I met, several times, with an interesting case. *Hetærina americana*, as I suppose, I have not compared the descriptions of Walsh's species, along the Shiawassee River, Michigan, gathers in great numbers on plants overhanging the river. I often gathered from twenty to thirty by one sweep of the net. Sexes mingled, males more numerous." (with Prof. Kellicott's permission.—P. P. C.)

EDWARD BAMBRICK, 32 years, of Lagrange, near Bustleton, died on Wednesday, of blood poisoning, caused by the bite of a green caterpillar. Nearly a fortnight ago Bambrick told Policeman Ashton, of Bustleton, that he had been bitten on the neck by a green caterpillar as he lay on the grass in front of his own home. The creature inflicted what seemed an insignificant puncture, which bled freely. He did not heed the wound until some time after, when Dr. Beyer was called in. Medical skill failed to overcome the poison, and the patient died.—*Philadelphia Press.*

ANY other irritant would have acted in the same way, the fault was in the individual.—ED.

# OBITUARY.

PETER MAASEN, of Elberfield and Dusseldorf, died on August 2d, in his eightieth year. Mr. Maasen was well known through his writings on Saturnidæ, of which he made a specialty.

Mr. C. G. HALL died September 3d, at Bucland, Dover, England.

WE have received notice of the death of Mr. C. Zeiller, of Regensberg, Bavaria.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be limited to twelve (12) for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Such identifications as can be given will be published, according to number, in the issues of the NEWS. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

## Entomological Literature.

JOURNAL OF THE ASIATIC SOCIETY OF BENGAL, vol. xix, part 2, 1890.—Suppl. No. 1, Catalogue of the Insecta of the Oriental Region. No. 2, Family Carabidæ, E. T. Atkinson.

PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, vol. iv, pt. 3d.—Rhopalocera from Mt. Kosciusko, New South Wales, by A. Sidney Oliff. New species of Lampyridæ, including a notice of the Mt. Wilson Fire-fly, by A. Sidney Oliff. Further notes on Australian COLEOPTERA, with descriptions of new genera and species, pt. 4, by Rev. T. Blackburn. DIPTERA, pt. 7, the Tipulidæ brevipalpi, by Fred. A. A. Skuse, vol. iv, pt. 4th. A revision of the Australian species of *Euplœa*, with synonymic notes and descriptions of new species, by W. H. Meskin. On Queensland and other Australian MACRO-LEPIDOPTERA, with localities and descriptions of new species, by Thomas P. Lucas. Descriptions of additional Australian Pyralidina, by E. Meyrick. Revision of Australian LEPIDOPTERA, pt. 3, by E. Meyrick. Revision of the genus *Heteronyx*, with descriptions of new species, by Rev. T. Blackburn. Notes on Australian COLEOPTERA, with descriptions of new species, pt. 4, by Rev. T. Blackburn. Studies in Australian Entomology—No. 2, Six new species of Carabidæ, by Thomas G. Sloane.

ANNALS AND MAGAZINE OF NATURAL HISTORY, vol. vi, No. 33.—Notes on Longicorn COLEOPTERA of the group Cerambycidæ, with descriptions of new genera and species, by Charles J. Gahan. Descriptions of new species of African Lycænidæ, chiefly from the collections of Dr. Staudinger and Henley Grose Smith, by W. F. Kirby.

THE APPLE MAGGOT, *Trypeta pomonella*.—A consideration of the literature, history, distribution, transformation, life-history and habits of this insect; also remedies. The results of investigations made in 1888–89, by F. L. Harvey, M. S. This interesting paper is fully illustrated by four plates, with a number of figures.

NEW TYPES OF COCKROACHES FROM THE CARBONIFEROUS DEPOSITS OF THE U. S.—New carboniferous Myriapoda from Illinois. Illustrations of the carboniferous Arachnida of North America, of the orders Anthracomarti and Pedipalpi. The insects of the Triassic beds at Fairplay, Col., from Memoirs Boston Society Natural History, by S. H. Scudder, 72 pages and 12 fine plates; new genera and species are described.

THE ENTOMOLOGIST, October, 1890.—Additions to the British list of Deltoids, Pyralides, Crambi, since 1859 (with plates), by Richard South. Abundance of LEPIDOPTERA in New Zealand, by W. W. Smith. Notes on *Teniocampa opima*, by J. Arkle. Contributions to the chemistry of insect colors, by F. H. Perry Coste. The Westman Islands, by Rev. Dr. F. A. Walker. The alteration of the name of Indian Geometrid Moth, by A. G. Butler. Entomological papers in Continental Periodicals, by W. Warren. Entomological notes, captures, etc. Doings of Societies, Reviews.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, October, 1890.—Classification (concluded), by A. F. Griffith. Occurrence of *Plusia moneta* Fab. in Great Britain, by C. G. Barrett. *Eulepia cribrum*. by Rev. E. N. Bloomfield. *Apatura isis* by J. E. Mason. Note on the food of *Drymonia dodonæa*, by W. R. Jeffrey. Re-occurrence of *Epischnia Bankesiella* at Portland, by N. M. Richardson. Occurrence in Dorset of *S. subsequana*, H. and *M. rufimitrana* H. S., id. Notes from the Red Sea, by J. J. Walker. The life-history of the new *Tinagma* (*T. betulæ*) of the Birch, by J. H. Wood. Description of *T. betulæ* n. sp., by H. T. Stainton. Some remarks on the genus *Xylophilus*, with descriptions of two new species from Japan, by G. C. Champion. Two species of Psocidæ new to Britain, by R. McLachlan. *Æschna juncea* L. near Ringwood, id. *Gymnancyla canella* in September, by A. E. Hall. *Aplota palpella* in Wilts, by E. Meyrick. Hybernation of *Simæthis pariana*, by B. A. Bower. *Gyrinus urinator* at Swange, by C. H. Goodman. *Carabus glabratus* Payk. in Ireland, by Rev. Canon Fowler. *Creophilus maxillosus* v. *ciliaris* Steph., by H. S. Donnisthorpe. *Athous rhombeus* Ol. at Cobham Park, by J. Malings. Note on *Scopæus erichsoni* and *Hadroporus davisii*, by W. G. Blatch. Coleoptera in the New Forest, by Rev. Theo. Wood. *Quedius tristis predaceous*, by Prof. W. R. Kilbourne. Obituary. Societies.

THE YOUNG NATURALIST, October, 1890.—The Pterophorina, by J. W. Tuft. Coleoptera at Guestling, by A. Ford. *Pieris brassicæ* pupæ lying over, by James Dixon. *Lithosia sericea*, by Joseph Collins. *Nonagria typhe*, by G. Pullen. *Hydœcia petasites*, by Joseph Collins. *Noctua dohlii*, by A. E. Hall. *Agrotis agathina*, by Joseph Collins. *Rumi cratægata*, var., by A. E. Hall. Hawk moths, by C. W. Dale.

MEMOIRES SUR LES LEPIDOPTERES REDIGES par N. M. Romanoff, tome 4. Le Pamir et La Faune Lepidopterologique par Gr. Groum-Grshimaïlo. Illustrated with 21 magnificent colored plates with many figures, 575 St. Petersburg, 1890.

RECUEIL ZOOLOGIQUE SUISSE, v, No. 2, July, 1890.—The histological disposition of the pigment in the eyes of Arthropods under the influence of direct light and of complete obscurity, by Mlle. M. Stefanowska, 2

ZOOLOGISCHER ANZEIGER, Sept. 1, 1890.—On a peculiar organ in the embryo of Locustidæ, by W. M. Wheeler.

JAHRBUCH DES NATURHISTORISCHEN LANDES-MUSEUMS VON KARNTEN 20 heft, Klagenfurt, 1889.—The Lepidoptera of the Lavantthal, and of both Alps Kor and Saualpe, by G. Höfner. On Carinthian Hymenoptera,* by E. Liegel.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, L, 1890.—Researches on the Structure of Spermatozoa: The spermatozoa of insects (I. Coleoptera), by E. Ballowitz, 4 plates. The development of the sexual organs and the intestine in *Chironomus*, by R. Ritter, 1 plate.

ENTOMOLOGISCHE NACHRICHTEN, xvi, Nos. 17 and 18, September, '90. —New West African Orthoptera from Kribi, collected by H. Lieut. Morgen,* F. Karsch; 4 woodcuts; *Morgenia*, *Mataeus*, *Chondrodera*, *Lichenochrus*, *Mormotus*, *Liocentrum*, *Opisthodicrus*, *Tomias*, *Lagarodes*, *Stenampyx*, *Pantecphylus*, *Polyglochin*, *Habrocomes*, new gen. Synopsis of the trispinous species of *Sphenoptera* of Europe and the Caucasus,* by E. Reitter. A Review of Scudder's Butterflies of the Eastern United States and Canada, by A. Speyer.

SITZUNGSBERICHTE DER NATURFORSCHER GESELLSCHAFT BEI DER UNIVERSITAT DORPAT, ix, 1 heft (1889), 1890.—Four papers on Livonian Diptera, by H. Sintenis. Observations on Tardigrada, by H. Rywosch.

MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT, viii, No. 5, August, 1890.—Three papers on Swiss *Bombus*, by Frey-Gessner. Notes on Swiss Neuroptera, by F. Ris. Two new genera of Tryphonidæ,* by Dr. Kriechbaumer; *Aethalodes*, *Bremia* n. gen. (from Europe). Diptera Helvetiæ, by Dr. G. Schoch; 1st part. Coleoptera Helvetiæ, by Dr. Stierlin (continued).

BOLLETINO DEI MUSEI DI ZOOLOGIA ED. ANATOMIA COMPARATA DELLA R. UNIVERSITA DI TORINO, N. 78.—Diagnoses of new species of Diptera [from Italy]*, by Dr. Giglio-Tos.

No. 84.—New species of Diptera from the Zoological Museum of Torino,* by Dr. Giglio-Tos; 1 plate; *Ditomyia zonata*, *D. mexicana*, Orizaba, Mexico, n. sp., figs. 6 and 7.

No. 85.—On a mode of preserving the larvæ of Lepidoptera with their colors, by F. Crosa.

ZOOLOGISCHER ANZEIGER, Sept. 15, 1890.—Some observations concerning the closed tracheal system in insect larvæ by Dr. H. Dewitz.

VERHANDLUNGEN DER K. K. ZOOLOGISCH-BOTANISCHEN GESELLSCHAFT IN WIEN xl, 1 quartal, 1890.—Monograph of the Proscopidæ,* C. Brunner. v. Wattenwyl; 3 plates; *Prosarthria*, *Apioscelis*, *Coryrhynchus*, *Tetanorhynchus*, *Stiphra*, *Taxiarchus*, *Anchotatus*, *Epigrypa* n. gen.; all the species are from South America. A new species Tenthredinid,* and Apidæ frequenting *Brassica oleracea* L, by Dr. R. [illegible]belli. Determination table of the Parnidæ of Europe, the Mediterranean fauna and the bordering districts, by A. Kuwert.

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* Contains new species other than North American.

# Doings of Societies.

A regular meeting of the Entomological Section of the Academy of Natural Sciences was held at the Hall September 25th. Meeting called to order at 8.20 P. M. In the absence of the Director, Dr. Horn, Mr. Martindale occupied the chair. Members present: Messrs. Ridings, Laurent and Skinner. Associates: Welles, Calvert, Westcott, Liebeck, Castle, Seeber and Fox. A number of specimens were presented to the cabinet, among them being *Arg. montinus* and *C. mandan* from Mr. S. H. Scudder. Mr. Calvert presented determinations of the species of *Odonata* brought home by the expedition sent to Mexico by the Academy. Mr. Laurent reported the capture of *C. serena* and *Apatela funeralis* at the electric light. Mr. Martindale spoke of the great scarcity of species of *Catocala* this Summer, and reported finding *P. ajax* and the larvæ of *Phobetron pithecium* and *Tolype velleda*. He had had success in capturing moths by rubbing rotting bananas on trees to attract them. Mr. Welles reported the capture of *Vanessa J-album* and *Cat. unijuga* from Elwyn, Delaware County, Pa. He had seen *Feniseca tarquinius* greatly attracted to a perspiring individual. Mr. C. W. Johnson, of the Wagner Institute, was elected an associate.

HENRY SKINNER,
*Recorder.*

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Sept. 4, 1890.—Under the head "short communications and exhibition of specimens," Mr. Heidemann spoke of the occurrence of *Cylapus tenuicornis* (Capsidæ) near Washington, D. C., and Mr. Schwarz exhibited specimens of *Choragus nitens* (Anthribidæ) lately found in the District, also a branch of *Carpinus* infested in a peculiar way by the larvæ of *Acoptus suturalis* (Curculionidæ) and a specimen of *Hymenarcys nervosa* with deformed antennæ, and he also called attention to the reported discovery of the stylopized Gryllotalpas in eastern Africa. Dr. Marx reported having found specimens of *Latrodectus* under a board, devouring carabids—the webs of the spider being garnished with fragments of the beetles. As possibly throwing light on the subject, Prof. Riley mentioned having been greatly surprised this Summer at the large number of insects, *Lachnosterna*, *Xylocopa*, *Bombus*, etc., that he found about his grounds at Sunbury, with large perforations and apparently killed by birds, and probably the house wren. Mr. Fox thought that spiders were largely responsible for this work. Prof. Riley described his recent investigations into the life-history and habits of *Sphecius speciosus*, exhibiting specimens of the egg *in situ* on Cicadas, and of the young and full-grown larvæ and cocoons. Careful drawings were shown illustrating the different stages and habits of *Sphecius*.

Mr. Schwarz queried, in view of the earlier appearance of the *C. septendecim*, whether *Sphecius* ever preyed on that species. Prof. Riley showed that the period of *Septendecim* and *Sphecius* overlapped, and that the general belief that *Sphecius* attacked the seventeen-year locust, while not based, so far as he recalled, on observation, was probably well founded.

Mr. Howard exhibited specimens of sand cricket, *Stenopelmatus fasciatus*, which had been recently sent to Prof. Riley by one of the correspondents. Mr. Howard stated that they occurred abundantly in the southwest, and are reported erroneously to be extremely poisonous. As stated by Prof. Riley, in the "Standard Natural History," they are carnivorous in habit.

Mr. Mann described some observations and experiments relating to the longevity of decapitated specimens of *Caloptenus*, and the vigorous resistance of such specimens to the attacks of ants.

Mr. Schwarz, "On Black Locust Insects," presented a list of twenty-four species of Coleoptera bred by him in May from dying trunks of Black Locust, and spoke of the principal insect enemies of this tree in the District. Discussed by Messrs. Riley and Howard.

Mr. Schwarz also read a paper on the food habits of some Scolytidæ observed by him during the Summer. Galleries of the following species were exhibited and explained: *Xyloterus politus* in *Acer dasycarpum; Xyleborus furcatus* and *pubescens* in Walnut; *Cnesinus strigicollis* in *Liquidambar styraciflua.* C. L. MARLATT,

*Recording Secretary.*

PROCEEDINGS OF THE ENTOMOLOGICAL CLUB OF THE A. A. A. S. OF INDIANAPOLIS, 1890.—The Club met in regular session on August 20th, 9 A. M., room 11, in the State House. President, Prof. A. J. Cook, in the chair. There were present through the meeting, Messrs. Chas. Robertson, Clarence M. Weed, E. W. Clatpole, James Troop, F. S. Earle, L. H. Pammel, Herbert Osborn, John Marten, H. Garman, Geo. F. Atkinson, Charles W. Hargitt, Thomas Hunt, John W. Spencer, W. B. Alwood, J. Fletcher, F. M. Webster, W. W. Norman, S. G. Evans. W. S. Blachley, Truman P. Catter, Ralph St. F. Perry, Miss Mary E. Murtfeldt, Miss Augusta Murtfeldt, Mrs. K. B. Claypole, Mrs. O. Hanney.

The President proceeded to deliver a most interesting address upon Teaching of Entomology.

Dr. C. Weed then read a paper upon the life-history of the evening Primrose Curculio (*Tyloderma foveolatum*). He reported breeding a species of *Bracon* from the larvæ of the Curculio, and recorded observations upon the habits of both insects.

At the request of the President, Mr. Fletcher presented some notes upon the injuries caused by the Hessian Fly, the wheat stem maggot and an undetermined species of *Oscinis*. He stated that he had been studying these insects at Ottawa, Can., during the last four years.

A paper on the subject of American Silk Spinners, by Mr. Edward L. Graef, was read by the Secretary, of which the following is an abstract:

"Refers to the periodical, phenomenal increase of some species of insects and their sudden disappearance. Speaks of the adaptability of the cocoons of *L. cecropia* Linn. for the manufacture of silk, and of the firmer belief of the writer in the possibility of the creation of an American industry in the rearing of their larvæ for manufacturing purposes. Solicits plans for the profitable rearing of the larvæ of this, or other American silk spinners. Also for preparing their cocoons. Offers a prize ($50.00) for this purpose."

An interesting paper was read by Dr. C. M. Weed, the subject of which was "The food plants of the Clover Stem Borer (*Languria moxandi*). Fifteen species of the plants were reported on which the larvæ is known to feed.

Prof. Osborn followed with a paper on a peculiar Coleopterous larva infesting the stems of plants.

Dr. Weed presented a short paper upon the oviposition of *Listronotus latiusculus*. The eggs are laid in bunches of five to ten on the leaf stalks of *Sagittaria variabilis*, and are covered with bits of epidermis chewed up by the adult beetle.

Mr. Charles Robertson made some remarks upon the habits of *Emphor bombiliformis*, which he stated was apparently a special visitor of *Hibiscus*. The nests were constructed by burrowing in the ground, and, in order to facilitate the excavation, water was frequently carried to the hole with which the bottom was moistened. Sometimes but one pellet of earth would be carried out after an application of water, while in some cases he had observed as many as four of these pellets thrown out immediately following an application.

Miss Mary E. Murtfeldt read a charming paper entitled, "Some experiences in rearing insects." In this paper some valuable hints were given as to the best way to manage larvæ so as to carry them to maturity, and the most frequent causes of failure were mentioned. The paper was listened to with great attention by all present.

The Secretary proceeded to read the following paper upon "The Preparatory Stages of *Eustrotia caduca*," by D. S. Kellicott, of Columbus, O.

Prof. Cook presented a note upon a new breeding habit in *Agrotis C-nigrum*. He had found the eggs on the foliage of currant bushes and reared the larvæ thereon.

Prof. Osborn read an interesting paper on the period of incubation of Mallophaga.

Mr. S. F. Earle presented several interesting notes on some injurious insects of southern Mississippi. *Diabrotica 12-punctata* was a very abundant insect, and, in addition to its well-known food-plants, it also fed to an injurious extent upon the foliage of peach and also cabbage. Cut-worms were very injurious in gardens. A species of Aphis worked serious injury to the cucumber and melon veins. *Pieris rapæ* is exceedingly destructive *Doryphora 10-lineata* had not yet reached southern Mississippi. Sphinx larvæ were very destructive to the foliage of tomatoes and the boll worm to the fruit.

(To be continued.)

F. H. Webster,
*Secretary*.

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Entomological News for October was mailed October 2, 1890.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. I. DECEMBER, 1890. No. 10.

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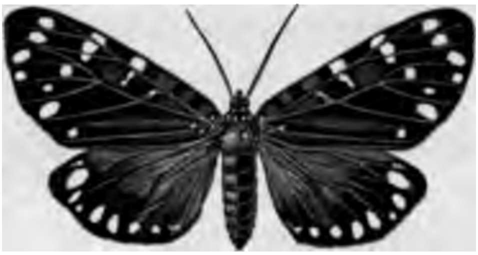
# ANOTHER TROPICAL SPECIES OF LEPIDOPTERA IN FLORIDA.

By G. H. FRENCH, Carbondale, Ill.

In the September number of ENTOMOLOGICAL NEWS, p. 105, Mr. Dyar describes two species of insects new to our fauna, *Callidryas statira* and *Composia fidelissima*. I have had for about a year another species of *Composia* collected in Florida by Prof. Velie, of Chicago, during the Winter of 1888 and 1889, and sent to me by my friend, Mr. W. E. Longley, of the same city. Not having the means of identifying the specimen I sent a colored print of it to Mr. A. G. Butler, of London, who writes that it is *Composia olympia* Butl. From comparison of Mr. Dyar's description with my specimen it seems to be closely related to *C. fidelissima*. The following figure and description will show the points of difference.

*Composia olympia* Butl. Expanse 2.5 inches. Black, the fore wings with three bright scarlet, nearly quadrate spots between the costal and subcostal veins, extending from the base to the middle of the cell; a square white spot beyond the third scarlet one; just beyond the end of the cell a transverse row of six white spots of varying size, the last the largest and a little below the line of the others, the fifth the smallest; beyond this row and about half way to the apex is another row of four white spots, the last out of line of the others; a small spot at the posterior angle; all of these transverse spots more or less rounded. In the cell are two narrow bars that do not quite reach from vein to vein, the outer white, but the inner white, strongly washed with scarlet.



The hind wings have a subterminal row of nine white spots, the first, fourth and ninth, small; the second largest. The fore wings show blue reflection in oblique light in the cell up to near the first bar, in the outer part of the cell about the end, at the base below the cell and along the posterior margin. In the same light the hind wings show blue reflection above the subcostal vein almost to the apex, in the cell to its end, below the cell and lower branch of submedian vein to the outer margin. Head with eight white dots; back of antennæ, below antennæ, above the eye and back of the eye. Collar with a row of six white dots. Thorax with six white dots on the anterior part and a row of four pale yellow dots across the posterior. Abdomen blue by reflection.

Beneath, the white spots of the upper side repeated, the space of the scarlet spots solid scarlet and confluent with the first bar in the cell, this bar having no white in it as it has above. The blue reflection is more pronounced than it is on the upper surface. The abdomen is banded with pale yellow and black, the terminal pale band whitish.

According to Mr. Butler this seems as yet to be a rare species, though Prof. Velie took about a dozen recently. The type specimen was from Brazil; it has been taken in Central America and once before at Key West, Fla.

ALETIA ARGILLACEA Hub., was seen sparingly the last week in September at Columbus, O. I have not yet seen it in abundance here, whilst at Buffalo, N. Y., scarcely an Autumn passes without the appearance of many. If my observations accord with facts, why the greater abundance at the point so much further from the cotton fields?—D. S. KELLICOTT.

# Description of three new species of African Hesperidæ.

BY REV. W. J. HOLLAND.

The appended descriptions are all of species belonging to the genus *Proteides* Hüb. I hope shortly to be able to publish figures of these and a number of other species.

1. **Proteides margaritata** n. sp.

Allied to *P. erinnys* Trim. Upperside: *Anteriors* broadly dark brown, clothed with greenish yellow hairs at the base, and having the following markings: three small subapical spots arranged in a series curving outwardly from the costa toward the external margin, a quadrate spot at the end of the cell, a square spot beyond the end of the cell between the second and third median nervules, below this between the first and second median nervules a spot resembling an hour-glass, and between the first median nervule and the submedian vein two triangular spots, of which the one nearest the base is obscure, being overlaid by the greenish hairs which cover the base. All of these spots are vitreous. *Posteriors* with the outer third and anterior margin broadly dark brown, cell and middle area pale orange, covered with greenish hairs at the base and intersected by the dark brown nervules. The outer margin at the anal angle is broadly orange red.

Underside: *Anteriors* fuscous, clouded with deep black at the apex and the middle of the disc, and broadly stramineous on the inner margin. The subapical area is irrorated with minute white scales. The spots of the upper surface reappear, but are not so distinct and sharply defined; the subapical series and the spot at the end of the cell are surmounted toward the costa by broad spots of nacreous. The end of the cell is also defined by a very narrow line of the same color. *Posteriors* of the same color as the primaries, clouded with dark brown on the outer third, and having the middle area ornamented by a very broad and irregular spot of pearly white. The anal angle is more narrowly orange than the upper surface; the upper surface of the abdomen is fuscous, annulated with pale yellow; the lower surface of the abdomen is not so distinctly annulated with pale gray. Antennæ black upon the upper side, fuscous below. Expanse of wings 48 mm.

*Hab.*—Valley of the Ogove. Type in coll. Holland.

2. **P. iricolor** n. sp.

Upperside uniformly dark brown, showing in certain lights a golden-green gloss. Fringe at the anal angle of the posteriors broadly white.

Underside: *Anteriors* with the anterior margin and the apical third violet-green. The lower half of the cell and the middle third of the wing is brown without any iridescence, and the posterior margin is very broadly pearly-white. There is a crimson spot on the costa at the base. *Posteriors* violet-green, with a beautiful iridescence in certain lights, the violet tints deepest toward the inner margin and the anal angle, where the wing inclines to black. There is a crimson spot at the base, two longitudinal spots of velvety-black in the cell, and a discal series of rounded spots of the same color, of which the one nearest the anal angle is bifid. The fringes at the anal angle are white, as upon the upper surface. The head, thorax and abdomen are of the same color as the wings upon the upper side; the lower side of the abdomen is ochreous. The antennæ are black above and ochreous below. Expanse of wings 55 mm.

*Hab.*—Valley of the Ogove. Type in coll. Holland

3. **P. laterculus** n. sp.

Allied to the preceding, but smaller.

Upperside: The entire upperside of the wings, head, thorax and abdomen, is dark brown. The fringes of the posteriors near the anal angle are light fuscous.

Underside: The ground color is the same as upon the upper surface; the inner margin of the primaries is broadly white. The base and middle area of the secondaries is brick-red; there is a large circular spot of velvety-black at the end of the cell in the secondaries, and a series of five discal spots of the same color following this. The series is interrupted opposite the cell, the three largest spots being placed after the third median nervule. The fringes at the anal angle, and the tip of the abdomen on the underside are stramineous. Expanse of wings 38 mm.

*Hab.*—Valley of the Ogove. Type in coll. Holland.

To be continued

# ELEMENTARY ENTOMOLOGY.

## Sixth Paper.—THE WINGS.

The wings of an insect are membranous expansions of the body wall. They first appear in the pupal or later nymphal stages as flat, sac-like projections near the lateral borders of the terga of the meso- and metathorax. As the wings develop, the greater part of the dorsal and ventral walls of this flat sac become closely united. Along certain lines, both the dorsal and ventral walls become thickened. These lines are so situated that when the union of the two walls takes place, those on the dorsal wall coincide with those on the ventral wall; they thus form the frame-work of the wings, and are called *veins*, *nerves*, or *nervures*. Many veins enclose a tube formed by the union of two grooves, placed one on the inner or opposing side of each of the two thickened lines. Through these tubes blood circulates; often a trachea exists in the centre of this tube.. The veins or nerves of an insect's wing do not correspond to the similarly named parts of higher animals.

That part of the wing by which it is attached to the thorax is the *base*. The shape of the wing is roughly triangular; its three edges, borders, or margins, receive distinctive names; the front edge is also called the *costal* margin, or simply the *costa;* the outer edge is also termed *apical*, the remaining border is known as the *inner*, *hind*, or *anal* margin. The *apex* of the wing is the angle where the front and outer margins meet. The inner and outer margins meet at the *hind* or *anal* angle.

All the veins of a wing taken collectively constitute the *venation*, *neuration*, or *reticulation*. The venation is regular, and although differing very much in various groups of insects, is based on a general plan. Five (or more) large veins run from the base towards the apical border, diverging from each other. These veins branch : at right angles to these large veins and their branches are other short veins. The branches of the large veins are sometimes known as *sectors*. Each litttle area or space of the wing, bounded by veins, is called a *cell*, or *cellule*. No general nomenclature has yet been established for the venation of all the groups of insects; for each group a special nomenclature is in use.

The front wings may be specialized so as to form protective covers for the hind wings. In beetles and earwigs the front wings are thick and horny, and are termed *elytra*. In water-bugs and others, they are similar to elytra, but the apical part is membranous, hence their name of *hemelytra*. In grasshoppers and katydids they are leathery, or parchment-like, and are called *tegmina*.

Many insects, even of those groups which, as a general rule, undergo a complete transformation, are wingless. Sometimes only the front wings are present; the hind wings are then usually represented by a pair of small club-shaped organs—the *halteres*, *balancers*, or *poisers*—as in the common house-fly. Rarely the hind wings only are present, in which case the front wings are represented by organs similar to the halteres, but distinguished from them as *pseudo-halteres*. P. P. C.

# CICINDELIDÆ OF A SEASON.

BY CHAS. LIEBECK.

This has been the most successful season for *Cicindelæ* that has occurred during my experience in Coleoptera collecting. Of nineteen species and varieties occurring in eastern Pennnsylvania and southern New Jersey, fourteen have been taken by me this season.

The species follow in order as they are listed, with some reference to their occurrence during former years.

*Tetracha virginica* Linn.—Nocturnal in habits, a few specimens being taken in open fields under boards and fence rails, middle of July, at Abington, Pa.

*Cicindela unipunctata* Fab.—Reported as occurring at Atco and Woodstown, N. J. One of the species not taken this season.

*C. modesta* Dej.—Not taken as abundantly this season as in previous years, but scattered individuals taken in May, June and July, in all sections of southern New Jersey, in which any collecting was done. Two days in May, 1887, over one hundred specimens were taken in a space, not more than sixty feet square, below Gloucester, N. J. A second brood appears in September.

*C. 6-guttata* Fab. Twelve or fifteen specimens were taken under the bark of fallen trees along the banks of Cobb's Creek, Philadelphia, early in April, and a number on the wing the first week in May. Some have also been taken in July.

*C. patruela* Dej.—Occurs at Lancaster, Pa.; not taken this season.

*C. consentanea* Dej.—Occurred several years ago below Gloucester, N. J., but none taken in that locality recently. Collected by Dr. Hamilton, at Absecom, N. J., in September.

*C. purpurea* Oliv.—A common species occurring in May and June in almost every locality. Several specimens were captured on the wing at DaCosta, N. J., March 15, 1886, on sandy spots along the line of the railroad, when ice and snow still lay unmelted between the ties.

*C. generosa* Dej.—Taken during May and June at Westville, Atco and Hammonton, N. J.; most abundant the last week in May, but few being taken the latter part of June.

*C. vulgaris* Say.—Isolated specimens taken at different times during the season at Philadelphia, Pa., and Landisville, N. J. One specimen was taken in company with *C. purpurea* at DaCosta, March 15, 1886.

*C. repanda* Dej.—An early species common everywhere.

*C. 12-guttata* Dej.—Usually found on the banks of small streams early in May; abundant locally.

*C. hirticollis* Say.—Found on a small beach on the Delaware River below Gloucester, N. J., and everywhere along the beach at the sea-shore, where the white sand mingles with the mud of the meadows and forms a composition of a dark hue. May, June and July.

*C. punctulata* Fab.—An abundant species throughout the whole season everywhere. Taken without intervals from May to September. Often attracted to the electric lights at night.

*C. tortuosa* Dej.—I know of but two specimens ever taken in New Jersey several years ago at Atlantic City, one by Dr. Castle and the other by myself, and have not yet been able to determine whether they actually inhabit this district, or were only accidental introductions.

*C. dorsalis* Say.—A very common species at the sea-shore, along the water's edge, where sometimes hundreds can be seen within the scope of the eye. Most abundant in July; sometimes an all white variety is taken.

*C. marginata* Fab.—I found these on the meadows between Sea Isle City, N. J., and the main shore, inhabiting the dry, bare spots, quite abundant in the latter part of July. Have never noticed this species in the sand-hills or on the beach.

*C. lepida* Dej.—A species peculiar to the sand-hills along the

New Jersey coast. It has, to my knowledge, been taken in all the hills from Atlantic City to Cape May; occurs during the latter part of July, and is, owing to its color and the intense whiteness of the sand, both difficult to see and to capture.

*C. marginipennis* Dej.—A species occurring in the mountain districts of eastern Pennsylvania, of which I know very little, not having taken any specimens.

*C. abdominalis* Fab.—Has frequently been reported as occurring at DaCosta, N. J., and although I have made it a point for several years to be in that neighborhood at the time of its appearance, have never, until this season, been fortunate enough to see any. During the last week in June ten or twelve specimens were seen between Hammonton and DaCosta, N. J., the majority of which were captured. It frequents the wagon-roads through the woods, and does not confine itself to any particular locality as other Cicindelæ do, those that were observed being scattered in ones and twos over the entire distance.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive item of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

NOTE ON THE MOLTING OF PHOBETRON PITHECIUM S. and A.—A larva of this species was observed to molt in the following manner: When preparing to cast its skin it rested on a leaf, the head withdrawn beneath joint 2 in the usual position of rest of larvæ of this group. The skin appeared loose, the long subdorsal processes shrunken, especially at the bases, their tips transparent from the partial withdrawal of the inner part. The larva jerked itself and rocked from side to side till the skin broke along the dorsal line from the head to the last segment simultaneously. As the chitinous part of the head of this insect does not extend up as far as in other subfamilies of Bombycidæ, the new head was readily withdrawn and the larva extricated itself from its skin by a lateral oscillatory movement, at the same time walking forward a little which served to draw out the subdorsal processes from their old enclosing skin. They were bent backward by the operation nearly in line with the body, and were seen to be attached to the body by a slight white filament, but it was not observed whether they were attached to the anterior or posterior edge of a segment (they are situated over each segmental suture between joints 3–13 inclusive, the last pair very small). As the new processes are withdrawn from inside the old ones and not formed under the body skin like the hairs of the Arctiinæ, it will be seen that a process once lost cannot be replaced, and, in the present instance, four of the normal twenty were lacking both before and after the molt. As this larva is well known, I will not enter upon a detailed description of it here, but will remark that the ends of the three pairs of long processes (the third, fifth and seventh pairs) appear to be slightly moveable at the will of the larva.

HARRISON G. DYAR.

THERE is a form of *Ergates spiculatus* Lec. (♀), which occurs in Wet Mountain Valley, Colorado, differing from the type as represented in the British Museum collection from the Pacific region, and figured by LeConte in having the elytra marked with whitish between the veins, and pale about the apices, where the dark color gradually becomes subobsolete. The thorax on the other hand, is quite dark. This form perhaps indicates a tendency to that sexual dichroism which is, as pointed out to me by Mr. Gahan, so well marked in certain other Longicorns; or, it may be a climatic race, a product of the drier central region of North America. In structure this species already presents secondary sexual characters which have led to the sexes being described as different species, but normally the sexes do not differ in color. This pale-marked ♀ form of *E. spiculatus* has been mentioned by Leng, but apparently it has received no name; it may be conveniently known as var. *marmoratus*. From one of my specimens of this variety (now in the British Museum) I extracted an egg, which, in its dried state, is pale amber color, elongate, subcylindrical, attenuate at the ends; length, 2¼ mm.; breadth, 1 mm.—T. D. A. COCKERELL.

THE fact mentioned above is by no means rare in its occurrence in the specimens received from Oregon and Washington, nor is it by any means peculiar to the female. The discoloration is not due to climatic influences, as it is equally observed in specimens from the dry regions of the centre of the continent and the notoriously damp climate of the Northwest. They seem to me merely imperfectly chitinized specimens, hardly deserving a varietal name. Such discolorations seem quite common in those Coleoptera with a coriaceous elytral textture. They are probably the result of a reduction of temperature during the evolution of the imago.

GEO. H. HORN.

STINGING POWERS OF VESPA VULGARIS AND ICHNEUMON SUTURALIS.—A few days ago Mrs. Gillette called my attention to a dead (?) wasp upon the window that she had killed, so that it would not sting our little daughter, who would be sure to try to catch the "bug" if she saw it. The wasp was a specimen of *Vespa vulgaris*, and the blow that was supposed to have killed it had entirely severed the abdomen from the rest of the body. Nothing more was thought of the wasp until the next day, twenty-four hours later, when the screams of the little girl called her mother to the scene. The child had picked up the pretty abdomen of the wasp and had received a severe sting to pay her for her curiosity. The abdomen at this time seemed thoroughly alive. How much longer it would have retained its power to sting, had it not been destroyed, I am unable to say.

STINGING POWER OF ICHNEUMON SUTURALIS.—While collecting a few days since a female *I. suturalis* lit upon a bush just in reach of me. With a quick sweep of the hand I caught it, and held it, while, with the other hand, I got out my cyanide bottle. As I was about to bottle my capture I received a thrust in the palm of my hand that led me to suspect that in my haste I had mistaken a wasp for an *Ichneumon*, and I quickly dropped it. The culprit was recaptured and proved to be, as stated above, *I. suturalis*. The sting was like the thrust of a pin, there being no swelling of the part and no pain after the first two or three seconds.

I had, previous to this, watched *Ichneumons* in their attempts to sting while holding them in my hand, but this is the first time that one has really succeeded in producing anything like a sting.—C. P. GILLETTE.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st. The number of specimens to be limited to twelve (12) for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Such identifications as can be given will be published, according to number, in the issues of the NEWS. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

EUGENE R. FISCHER.—1, *Episcopus ornatus;* 2, *Proconia* sp. (*confluens?*); 3, *Proconia* (*confluens?*); 4, *Stenarops malinus;* 5, *Nysius californicus.*

O. S. WESTCOTT.—1, *Cœnonympha ochracea;* 2, *Rheumaptera hastata;* 3, *Melipotis* sp.; 5, *Megachile latimanus;* 6, *Sparnopolius fulvus;* 9, *Scatophaga stercoraria;* 10, *Scatophaga squalida;* 11, *Dendroctonus* sp.; 12, *Dendroctonus* sp.

F. S. DAGGETT.—1, *Chalcophora virginiensis;* 2, *Rhagium lineatum;* 3, *Cryptus nuncius;* 4, *Buprestis fasciata;* 5, *Harmonia 14-guttata,* 6, *Coccinella monticola;* 7, *Coccinella transversoguttata;* 8, *Harmonia 12-maculata;* 9, *Hippodamia parenthesis;* 10, *Harmonia picta;* 11, *Pogonocherus mixtus;* 12, *Hippodamia 13-punctata.*

## Entomological Literature.

TRANSACTIONS ENTOMOLOGICAL SOCIETY LONDON. Part 3, 1890.—On the structure of the terminal segment in some male Hemiptera, by Dr. David Sharp. On the classification of the Pyralidina of the European fauna, by E. Meyrick. Additions to the Cicindelidæ fauna of Mexico, with remarks on some of the previously recorded species, by Henry Walter Bates. A Catalogue of the Rhopalocerous-Lepidoptera collected in the Shan States, with notes on the country and climate, by Neville Manders. Notes on the species of the families Lycidæ and Lampyridæ, contained in the Imperial Museum of Calcutta, with descriptions of new species, and a list of the species at present described from India, by Rev. Henry S. Gorham. On some new species of African diurnal Lepidoptera, by Philip Crowley.

THE WEST AMERICAN SCIENTIST, September, 1890.—New Coccids from California, by D. W. Coquillett.

PROCEEDINGS AND TRANSACTIONS OF THE LIVERPOOL BIOLOGICAL SOCIETY, vol. iv, p. 170.—The post-embryonic development of a gnat (*Culex*), by C. Herbert Hurst.

ANNALS AND MAGAZINE OF NATURAL HISTORY, vol. vi, No. 34.—Description of some new species of African butterflies in the collection of Capt. G. E. Shelley, by E. M. Sharpe.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON. Pt. 3, 1890. —On some new moths from India, by H. J. Elwes. On a collection of Acarina found in Algeria, by A. D. Michael. Descriptions of new species of Lepidoptera-Heterocera from Central and South America, by Herbert Druce. On a collection of Lepidoptera made by Mr. Edmund Reynolds on the rivers Tocantins and Araguaya in the Province of Goyaz, Brazil, by Emily Mary Sharpe.

BIOLOGIA CENTRALI-AMERICANA. Part 87, August, 1890.—Coleoptera: vol. iv, pt. 2, by G. C. Champion, pp. 185–216, plates 8, 9; vol. vi, pt. 1, suppl., by M. Jacoby, pp. 201–208. Lepidoptera:-Rhopalocera: vol. ii, by F. D. Godman and O. Salvin, pp. 185–208, pl. 65. Rhynchota-Heteroptera, by W. L. Distant, pp. 345–352, pl. 32. Diptera: vol. ii, by F. M. Vander Wulp, pp. 177–200.

ESSAY ON THE DESTRUCTION OF THE MOSQUITO AND HOUSE FLY, by William Beutenmüller, 180 pp. 2 plates. This interesting essay was presented in competition for the prize offered by Dr. Lamborn, of New York, for the best on the subject. It gives an account of the anatomy, life-history and development of the mosquito, remedies against and an account of its natural enemies. A catalogue of the described transformations of the Odonata of the world is appended.

BERLINER ENTOMOLOGISCHE ZEITSCHRIFT xxxv, heft 1, 1890.—Lepidopterological notes from Sumatra, by Dr. L. Martin. The Bee genus *Dasypoda* Latr.,* by A. Schletterer; 1 pl. African Fulgoridæ,* by Dr. F. Karsch; 1 pl. *Paropioxys*, *Metoponitys*, *Anecphora*, *Paranotus*, *Euryprosthius*, *Phædolus*, *Conoprosthius*, *Aulophorus* n. gen. Contributions to the knowledge of the Lepidopterous fauna of Amurland, iv,* by L. Graeser. Contribution to the knowledge of the singing Cicadas of Africa and Madagascar,* by Dr. F. Karsch; 2 plates; 74 species are enumerated; *Lacetas*, *Ligymolpa*, *Pæctira*, *Musoda* n. gen. Description of the colors of the larva of *Papilio oxynius*, by Dr. J. Gundlach. Two new Buprestids from the Malayan Archipelago,* and *Agestrata lata* n. sp., by Dr. Richter. A new Buprestid from East Africa,* and a new Cetonid from East Africa,* by G. Quedenfeldt. *Akis Schweinfurthi* n. sp., by M. Quedenfeldt; from Egypt.

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* Contains new species other than North American.

ANNALEN DES K. K. NATURHISTORISCHEN HOFMUSEUMS, v, No. 2, Wien, 1890.—The Hymenopterous group of the Sphecinæ I. Monograph of the natural genus *Sphex* L.* (sens. lat.), first part, by F. F. Kohl; 5 plates; *S. morio*, Brit. Columbia; *S. præstans*, California; *S. neoxenus*, Vancouver Island; *S. excisus*, Vancouver Island; *S. clavipes*, Cuba; *S. chrysophorus*, Mexico; *S. Maximiliani*, Mexico; *S. spiniger*, Mexico, Brazil; new species from North America.

MATERIAUX POUR LA FAUNE ENTOMOLOGIQUE DU LIMBOURG, Coleopteres 3e centurie, Hasselt, 1890.—Materiaux pour la Faune Entomologique de la Province de Brabant. Coleopteres, 5e centurie, Bruxelles, 1890; both by A. P. de Borre.

BULLETINO DELLA SOCIETA ENTOMOLOGICA ITALIANA, xxii, 1890.—On a series of newly discovered secretory organs in the silk worm, by E. Vernon; 4 plates. Notes on some epizoic insects, by M. Bezzi: *Pulex tuberculaticeps* n. sp. on *Ursus arctos* L. Studies on some Formicidæ of the Neotropic Fauna, by C. Emery; 5 plates; I. Formicidæ of Costa Rica, a list of 107 species, with notes, 18 of them new species or races; II. On some new species of the genus *Pseudomyrma*, including new species from Central America, etc.; III. New American forms of the genera *Strumigenys* and *Epitritis*, etc.

ARCHIV FUR NATURGESCHICHTE, lvi, 1 band, 2 heft. Published Aug., 1890. Contains the bibliographical summary for Entomology for 1889, by Dr. Ph. Bertkau.

IL NATURALISTA SICILIANO, ix, 9.—Supplement to the Review of the Milabridæ (Bruchidæ), by F. Baudi. Conspectus of the Scydmænidæ collected by Lotharius Hetschko in Southern Brazil near Blumenau, by E. Reitter and F. Croissandreau.

COMPTE RENDU SOCIETE ENTOMOLOGIQUE DE BELGIQUE 6 Sept., 1890. Psychidological Notes,* by Dr. F. J. M. Heylaerts. Note on the Chrysobothridæ,* by C. Kerremans. *Pseudactenodes* n. gen. Description of a new species of Elateridæ of the genus *Dicronychus* Eschscholtz,* by G. Dumont. Descriptions of four new species of the family Chrysomelidæ by A. Duvivier. Notes on the Elateridæ of Chota nagpore,* by E. Candèze. Causeries Odonatologiques, No. 2, by E. de Selys-Longchamps.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, October, 1890. Materials for the Entomological fauna of Flanders, 4th century. Coleoptera.

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* Contains new species other than North American.

by A. P. de Borre. Acarinæ observed in France (first list), by R. Moniez. Galls observed in the North of France, by H. Fockeu (supplementary list).

SITZUNGSBERICHTE UND ABHANDLUNGEN DER NATURWIS. GESELL. ISIS IN DRESDEN, 1890, January-June. On mimicry, by Dr. J. Thallwitz; contains a number of references to insects.

BULLETIN DE LA SOCIETE PHILOMATHIQUE DE PARIS, 8e serie, II, No. 3, 1890.—Note on some fossil insects of the coal measures which bear aliform appendages on the prothorax, by C. Brongniart.

ZOOLOGISCHER ANZEIGER, Oct. 13, 1890.—Analytical chemical researches on living larvæ, pupæ and butterflies, by E. Verson.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE FRANCE, 6e serie, ix, 1889–90.—Coleoptera of the interior of China,* fifth part, by L. Fairmaire; *Stenonota*, *Corægrilus*, *Sallumia*, *Phyllolytus*, *Pasurius*, *Trymatoderus*, *Merarius*, *Hemadius*, *Talmonus*, *Osnaparis*, *Sepharia*, *Semacia*, *Tebalia*, new genera. Coleoptera of the North of Africa,* by L. Bedel. New, or little-known Cucujidæ,* seventh memoir, by A. Grouvelle, one plate. Lepidopterological Notes, second part, by C. Jourdheuille (on *Eupithecia valerianata* Hüb.). New, or little-known Diptera,* 34th part, by J. F. M. Bigot (Empidi); includes the following new species from North America: *Rhamphomyia Morrissoni*, *R. pachymera*, *R. nigrita*, *R. geniculata*. Contributions to the Indo-Chinese fauna: first memoir, Cicindelidæ and Elateridæ,* by E. Fleutiaux: second memoir, Hydrocanthares,* by Dr. M. Regimbart. Voyage of M. E. Simon to Venezuela: second memoir, Coleoptera,* by A. Grouvelle, 1 plate; third memoir, Coleoptera,* by A. Léveillé, fourth memoir, Arachnida,* by E. Simon; *Pseudidiops*, *Phæoclita*, *Celidotopus*, *Rhytidicolus*, *Accola*, *Psalistops*, *Stothis*, *Euthycælus*, *Epipedesis*, *Adranochelia*, *Stichoplastus*, *Ozopactus*, *Paratropis*, *Cosmopelma*, new genera; fifth memoir, Coleoptera (Lathridæ),* by M. J. Belon. Diagnoses of new, or little-known Lycidæ,* sixth part, by J. Bourgeois. Expedition of M. Ch. Allaud into the territory of Assinie (West Africa); first memoir, Lycidæ,* by J. Bourgeois; second memoir, Dytiscidæ and Gyrinidæ,* by Dr. M. Regimbart. Expeditions of M. E. Gounelle to Brazil. Temnochilidæ,* by A. Léveillé. A new *Boarmia*, etc., by C. Blachier, one plate; notes the occurrence of *Vanessa virginiensis* Dru. (*Huntera* Fab.), in the island of Teneriffe. Contributions to the Indo-Chinese fauna; third memoir, Carabidæ,* by H. W. Bates; *Arhytinus* n. gen.; fourth memoir, Cryptocephalidæ, Clytridæ and Eumolpidæ,* by E. Lefevre. Expedition of M. C. Allaud into Assinie, etc.; fifth memoir, Eumolpidæ, by E. Lefevre. Contributions to the Indo-Chinese fauna; sixth memoir, Galerucidæ and Alticidæ,* by E. Allard. New, or little-known Diptera,* 35th part, by J. F. M. Bigot (Cyrtidi). Voyage of M. E. Simon to Venezuela; sixth memoir, Clytridæ, Lamprosomidæ and

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* Contains new species other than North American.

Eumolpidæ,* by E. Lefevre; *Ephyræa* n. gen. Descriptions of a new genus, and of some new species of Phytophagous Coleoptera (Eumolpidæ),* by E. Lefevre; *Talurus* n. gen., *Alethaxius tuberculifer*, Mexico, n. sp. Entomology at the Universal Exposition of 1889, by A. Léveillé. List of the Coleoptera of Guadaloupe and descriptions of new species, by E. Fletiaux and A. Sallé; 517 species are listed. Contributions to the Indo-Chinese fauna: sixth memoir, Sagridæ, Crioceridæ, Chrysomelidæ, Hispidæ,* by Dr. J. S. Baly. Notice on the genus *Leptarctia* Stretch, G. H. French; describes some new North American varieties. From the bulletins of this society we note the following: *Enosis*,* Mabille (n. gen. Lepid.); *Ischyropteron*,* Bigot (n. gen. Diptera); *Sarothroceras*,* Mabille (n. gen. Lepid.); *Issacaris*,* Fairmaire (n. gen. Coleop.); *Phelister uncistrius*, Marseul (n. sp. Coleop.), Guatemala. *Choristoneura*,* Mabille (n. gen. Lepid.); *Hyda*,* *Stethotrix*,* *Dis*,* Mabille (n. gen. Lepid.); *Malthodes ligulifer* Bergroth (n. sp. Coleop.), California; *Palibothra*,* *Papua** Ragonot (n. gen. Phycitæ). A catalogue of the French species of Cerambycidæ is published in this volume.

Annales de la Societe Entomologique de Belgique, xxxiii.—Monograph of the European species and those inhabiting neighboring countries of the genus *Tiphia* Fab.,* by H Tournier. Notes on the Perlidæ described by Dr. Rambur, by H. Albarda. Note on *Tæniopteryx nebulosa* L. and *T. prætextata* Burm., by H. Albarda, pl. 1. New Elateridæ, by E. Candeze (see Ent. News, i, p. 53). Documents for a monograph of the Ichneumonidæ of Asiatic Russia,* by Dr. J. Tosquinet. Catalogue of the Coleoptera of the family Gyrinidæ, by G. Séverin; 303 species are listed. Pl. II figures the interesting Odonat, *Palæophlebia superstes* Selys.

Memoirs de la Societe Zoologique de France, iii, parts 2 and 3, 1890.—Phosphorescence in myriapods of the family Geophilidæ, by J. Gazagnaire.

Bibliotheca Zoologica II. Verzeichniss der Schriften uber Zoologie welche in den periodischen Werken enthalten und vom Jahre 1861-80, selbststandig erschienen sind. . . . von Dr. O. Taschenberg; 8th Lieferung, signatur 281-320. Leipzig, Engelman, 1890, pp. 2291-2610 (List of the publications on Zoology which are contained in periodicals and have appeared separately, from 1861-80. This "Lieferung" finishes the Hymenoptera and begins the Coleoptera

Les Abeilles.—Organes et Fonctions, Education et Produits, Miel et Cire, par Maurice Girard, Docteur des Sciences Naturelles, etc.; Avec 85, figures dans le texte, 3e Edition Paris: J. B. Bailliere et Fils, 1890 (Bibliotheque Scientifique Contemporaine).

Zoologischer Anzeiger, Oct 20, 1890.—The losing of liquid in butterflies after their imagonation, by Dr J Frenzel. The odorous glands of *Aphlebia bivittata* Brullé (Blattidæ), of Teneriffe, by Dr. H. Krauss.

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* Contains new species other than North American

# Doings of Societies.

(Continued from p. 152, vol. i.)

PROCEEDINGS OF THE ENTOMOLOGICAL CLUB OF THE A. A. A. S. OF INDIANAPOLIS, 1890.—Dr. Weed presented a short paper on the habits of *Lixus concavus.*

Prof. Hargitt called attention to early observations on the Canker-worm. He also spoke of a Cecidomyia infesting the tops of *Solidago*, and also presented "Notes upon *Cermatia forceps.*"

Prof. Webster spoke of the predaceous habits of *Cermatia* and its preying upon the Croton bug. Mr. Fletcher had observed the insect with Mr. Howard at Washington. Its mode of capturing the Croton bug before devouring it was remarkable. It sprang over its prey, which was thus encaged between many curved legs. He thought that Mr. Hargitt's success in keeping alive the specimens he had confined in a tin canister, was more due to the moisture thus secured than the darkness. He understood that this insect was a lover of damp places, like many other myriopods.

The Club then proceeded to the election of officers for the ensuing year, which resulted as follows:

*President*, Prof. Herbert Osborn, Ames, Iowa.
*Vice-President*, Miss Mary E. Murtfeldt, Kirkwood, Mo.
*Secretary*, Clarence M. Weed, Columbus, Ohio.

Prof. Osborn presented a paper on "The use of Contagious Diseases in destroying Injurious insects."

Prof. Atkinson spoke of some insects of Alabama.

Dr. Weed read a short paper on the oviposition of *Dectes spinosus* in *Ambrosia trifiida.*

Prof. Cook presented some notes on the insects of the year. He said Cut-worms and Saw-flies had been very injurious. The larvæ of *Ægeria tipuliformis* was attacked with a fungus growth like that attacking the white grub. The foliage of the quince and cherry were injured by the first brood of larvæ of Cherry Slug. Road dust was applied with excellent results. Dr. Weed presented a short paper on *Psephenus lecontei*, which, he stated, he had found on the shores of Lake Erie.

Club adjourned to meet in connection with the A. A. A. S. next year.

F. H. WEBSTER,
*Secretary.*

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Oct. 2, 1890.—Messrs. J. M. Stedman, Nathan Banks and F. W. Mally, were elected members of the Society.

Under exhibition of specimens and notes, Dr. Fox exhibited a specimen of a small spider, belonging to the genus *Episinus*, which was stated by Dr. Marx to be an undescribed species.

Dr. Marx called attention to two spiders new to our fauna, one belonging to the European genus *Histopona* taken at Penn-Mar, and also received from South Florida, and the other, a new genus, of uncertain position, but possibly allied to the Agalenidæ, represented by a single specimen taken on the grounds of the Department.

Mr. Marlatt exhibited a specimen of *Trypeta æqualis* Lw., which he had bred from seed-pods of *xanthium*, and the larval habit of which he had described at a previous meeting of the Society.

Mr. Marlatt then presented a paper on "Some observations on the habits of *Vespa germanica* and *V. cuneata*." The feeding and nesting habits, particularly of the first-named species, were described. Three kinds of nests were mentioned, viz.: the very rare ærial ones, those beneath stumps or stones, and those in open ground; the latter being much the more common. Various insect and mammalian enemies of these wasps were alluded to together with the means employed to destroy the nests when their proximity to dwellings renders them objectionable. Discussed by Messrs. Howard, Schwarz, Fox, Dodge, Stedman, Marlatt and others.

Mr. Howard read a paper entitled, "A new remarkable genus of Encyrtinæ," in which he characterized a new genus and species which possesses the peculiar ramose antennæ hitherto peculiar, in the subfamily Encyrtinæ, to *Tetracnemus diversicornis* of Westwood. Mr. Howard has named the genus *Tanaostigma* and the species *T. coursetiæ* from *Coursetia* (?) *mexicana*, a rare leguminous plant, collected in the Alamos Mountains, Mexico, by Dr. Edward Palmer, and in the ovaries and stigma of which the insect breeds. Discussed by Messrs. Schwarz, Howard and Marlatt.

Dr. Marx favored the Society with an account of his recent experiments to determine whether the bite of *Latrodectus mactans* is poisonous or not. He describes the poison glands of *Latrodectus*, which are very small. He had introduced the poison in various ways into guinea-pigs and rabbits without obtaining any satisfactory results, and proposed to vary and continue his experiments to put the matter of the supposed poisonous nature of the bite of this spider, if possible, beyond doubt. Discussed by Messrs. Schwarz, Howard, Fox and Marlatt.

Mr. Ulke, who was present, gave an interesting description of the habits of *Tachys incurvus* Say, which he had found in numbers in the nests of ants, and which is the first *Carabid* to be determined as truly myrmecophilous. He also described the habits of certain myrmecophilous Staphylinidæ, and exhibited a small collection of Coleoptera made by T. Ulke, illustrating the local fauna of the Black Hills district. Discussed by Messrs. Schwarz, Howard and Marx.

In connection with the subject of local faunas, Mr. J. B. Smith's recent catalogue of the insects of New Jersey was taken up and discussed at length by the Society.

Mr. Townsend submitted for publication a generic synopsis of the first five families of the N. A. Calyptrate Muscidæ.

C. L. MARLATT,
*Recording Secretary.*

ENTOMOLOGICAL NEWS for November was mailed October 30, 1890.

# Entomological News

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

OF THE

# ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

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## VOLUME II, 1891.

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PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.

1891.

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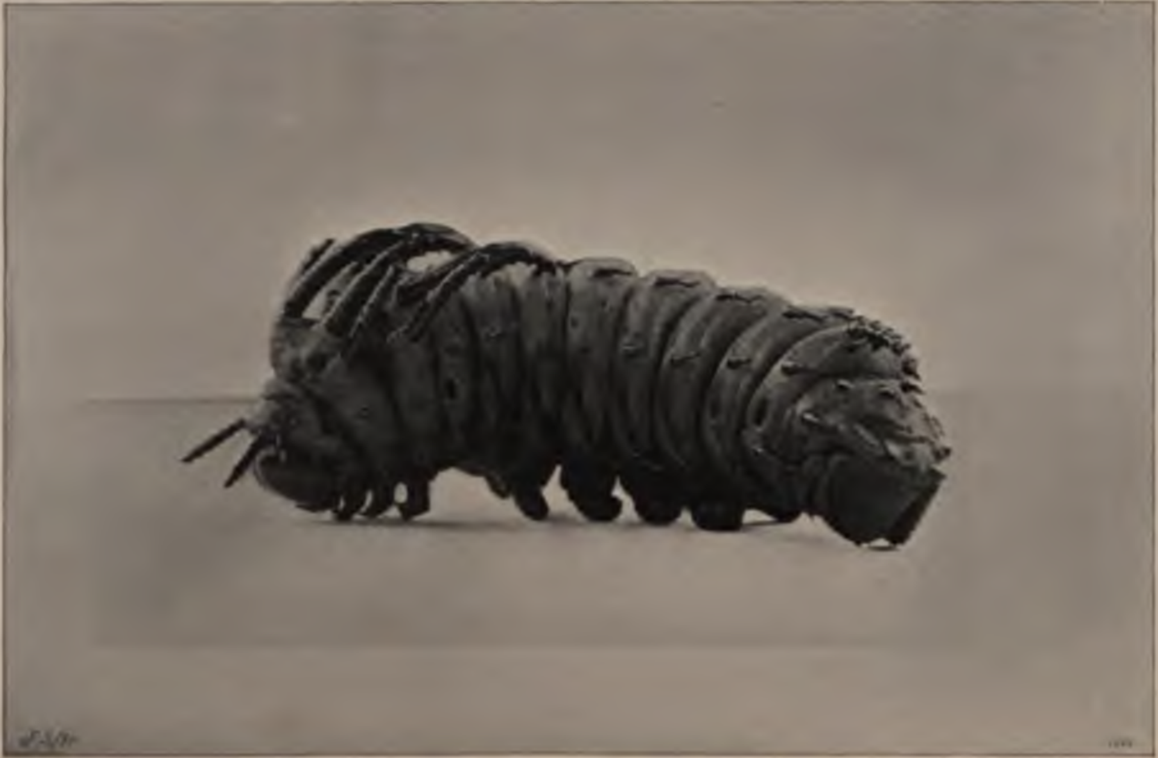

Ent. News Vol. II, Pl. I.

CITHERONIA REGALIS (LARVA).

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. JANUARY, 1891. No. 1.

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OUR illustration represents the "Hickory-horned devil" just as he appears when in search of a place to undergo his transformation into a chrysalis. He was found August 7th, crawling on the turnpike, by Julius F. Sachse, editor of the "American Journal of Photography," who put him on a gate-post, and did him the honor of taking his picture. We are indebted to Mr. Sachse for kindly loaning us the plate for the NEWS. "Every entomologist recognizes the difficulty experienced in attempting to preserve specimens of the larvæ of moths and butterflies; even under the most favorable circumstances the prepared specimens shrivel and lose their color. Heretofore, drawings have been made of the larva, a proceeding expensive, and often unsatisfactory. It is here where photography asserts its superiority—for example, we will take the illustration: It would be an easy matter to stop out the negative, print on heavy, plain paper, and then lightly tint with proper shades in water colors."* The reproduction is by the Ives process, the engraving by the Crosscup & West Co., and the printing by P. C. Stockhausen. We hope to give illustrations in volume 2 very frequently, and trust to receive the support of those interested in Entomology so that this may be done.

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*J. F. Sachse, in the "American Journal of Photography," September, 1890.

The NEWS is supplied at such a reduced figure as to make it possible for all to subscribe. We have increased its size to twenty pages, and, should the subscription-list justify it, we will make it even larger. Nothing will be left undone toward increasing its value and usefulness. Suggestions from subscribers, indicating how it may be improved for their benefit, will be thankfully received by the Committee.—ED.

## PHRAGMATOBIA ASSIMILANS Walker.

BY ANNIE TRUMBULL SLOSSON.

About a year and a half ago I described ("Ento. Amer." May, 1889) the rediscovery, at Franconia, N. H., of this interesting species.

It will be remembered that, among Walker's types in British Museum, there are two forms under this name, marked respectively, A. and B. One of these forms is thus described (I will not apologise for repeating the description, as it has not been printed recently):

"*Male.*—Red. Antennæ testaceous. Thorax with brown hairs. Wings red, veins darker. Primaries slightly brown along the costa and elsewhere indistinctly sprinkled with pale brown; with two blackish dots. Secondaries brighter red, with three black dots, two in disc and one near hind border towards inner angle. Length of body, 6 lines; of wings, 16 lines." As I said in my former paper my moth, taken at Franconia, May, 1886, corresponds in every respect with this description, save that it is a female and larger.

Of the other form Walker says: "*Var.*—Primaries almost wholly brown. Secondaries with broad, blackish, submarginal stripe."

This last variety I was so fortunate as to capture this year at Franconia. It is, like the one taken two years before, a female, in fine condition, having evidently just emerged. It differs from the first one not only by its blackish, irregular border on hind wings, and its somewhat darker primaries, but in having two diffuse, dark, transverse lines on fore wings, which are but faintly suggested in the other. I do not find that this species of Walker's is represented in any collection, except that of the British Museum, where the types—two worn and damaged specimens, I am told, are kept. Its rarity is, probably, to be attributed to its habitat and very early appearance. Both my specimens were taken in very cold weather, in a season in which few entomologists ever visit the mountain region of New Hampshire. The last one was found sitting on the floor of our piazza, near the light, just before midnight of the 24th of May. The thermometer at the time was below 48°, and there was still much snow on the mountains and in the woods.

I do not think that any one could examine these specimens of mine and doubt their belonging to Walker's species, which, as Prof. J. B. Smith says ("Can. Ent." xxii, 120), "has languished among the synonyms, ever since Dr. Packard referred it there in 1884." They are certainly not *rubricosa* Harris. Dr. Packard, himself, to whom entomology owes so much, and who is fairness and justice personified, would, I know, acknowledge this if he saw the two forms together. Prof. Smith, in the paper referred to above, recognizes the species on the ground, as he seems to intimate, of my rediscovery.

As the varietal form—with band on secondaries—has apparently received no name, being marked simply B in British Museum collections, and as it is a very distinct and strongly-marked form, I propose to call it *Phragmatobia franconia* n. var., and shall describe it more fully soon; with plate, if possible under that name.

———o———

## DESCRIPTIONS OF NEW SPECIES OF AFRICAN HESPERIDÆ.

BY REV. W. J. HOLLAND.

(Continued from vol. i, p. 156.)

4. **Proteides galua** n. sp.

Upperside: Ground color dark brown, fading into slightly paler fuscous at the apex of the primaries. The thorax and the base of the wings clothed with a vestiture of greenish brown hairs. *Primaries* ornamented by a series of subapical spots, of which the one furthest from the costa is the largest. The outer third of the cell is occupied by a large trapezoidal spot. Near the junction of the second and third median nervules is a much smaller subquadrate spot, followed in the next neural interspace, between the first and second median nervules by a very large subtrapezoidal spot, which is succeeded between the first median nervule and the submedian vein by a small triangular spot. This last spot is followed upon the same neural interspace by a still smaller spot lying near the base, and partly concealed by the hairy vestiture. *Secondaries* ornamented by a band of five yellow spots separated by the nervures and traversing the wing for about half its diameter in a line nearly at right angles with the posterior margin. The three outermost of these spots gradually diminish toward the interior, the last two are much longer, and the band has thus imparted to it a sinuate appearance. There is also a small yellow streak in the cell partly concealed beneath the vestiture of the wing. All the spots in the anterior wing are yellow hyaline, except the small triangular spot near the base above submedian vein. This spot and all the spots in the secondaries are opaque. The fringe of the secondaries near the anal angle is white.

Underside: The *primaries* are rich maroon, interrupted on the costa at the end of the cell by a pearly gray patch, and by the hyaline spots which reappear as on the upper surface. The apex is lavender, with three oval spots of maroon on the outer margin. The posterior margin is broadly ashen gray; the costa at the base is white. The *secondaries* are dark lavender-gray, ornamented at the base by an oval spot and in the middle by a very large and irregular spot of deep maroon margined with pinkish gray; the palpi are white beneath. The thorax and abdomen are dark brown; the antennæ are dark above and light beneath, as in most of the species of this genus.

The female does not differ materially from the male, except in being larger, and the markings more sharply defined upon the underside.

*Hab.*—Valley of the Ogove. Types in coll. Holland.

I give this species the name *Galua* after the tribe of the Galwas.

5. **P. benga** n. sp.

Upperside: The body and wings are uniformly brown, slightly paler on the outer margin; the fringes of the secondaries are narrowly white. The middle of the primaries is adorned by a broad subquadrate band of hyaline yellow divided into three spots by the nervures. Of these three the uppermost, situated at the end of the cell, is outwardly bifid, with the tips of the bifurcation rounded. A round, velvety, sexual band occupies the centre of the secondaries in the case of the male.

Underside: The lower side of the wings is as the upper, save that the costa of both the primaries and secondaries is washed with ochreous. Palpi pale gray beneath.

The female does not differ from the male, except in having a small lanceolate hyaline spot on the middle of the upper side of the submedian vein in the primaries. Expanse ♀, 45 mm.; ♂, 48 mm.

*Hab.*—Ogove Valley, Benita. Type in coll. Holland.

I name this species after the Benga, a tribe on the mainland near Benita.

6. **P. balenge** n. sp.

One of the largest species of the genus.

Upperside: Head, thorax, abdomen and wings, rich dark brown throughout, only fading a little at the apical extremity of the primaries into paler brown. *Anterior* wings ornamented as follows: at the costa, about one-third from the tip of the wings, there is a subapical series of four small white hyaline spots, the first of which is short, the second elongated, the third like the first, and the fourth, which is slightly removed from the rest, small and quadrate. There are, further, four large yellow hyaline spots, the largest, which is quadrilateral at the end of the cell, and the other three, which are subquadrate, arranged in a series upon the limbal area, on the interspaces between the median nervules. Upon the *posterior* wings there is a triangular spot of the same color as those upon the disc of the primaries located beyond the end of the cell.

Underside: The ground color is fuscous, clouded at the base of the primaries and upon the secondaries by dark brown. The spots of the upper surface all reappear upon the lower side, and there are in addition the following markings: Upon the primaries at the base upon the costa a white spot, beyond it about one-third of the distance from the base a white mark, at the middle of the costa above the large quadrate hyaline spot in the cell two small sagittate white marks, and at the apex a series of poorly defined lunulate marks also white; upon the secondaries there are two very small and indistinct white spots at the base, one small and sharply defined spot on the disc between the costal and subcostal nerves, a similar spot in the cell, and one like it between the second and third median nervules. The fringe at the anal angle is narrowly white; the underside of the palpi is cinereous, and the lower side of the abdomen is annulated with white. Expanse of wings 68 mm.

*Hab.*—Benita. Type ♀ in coll. Holland.

I name this species after the Balenge, a tribe found near Benita.

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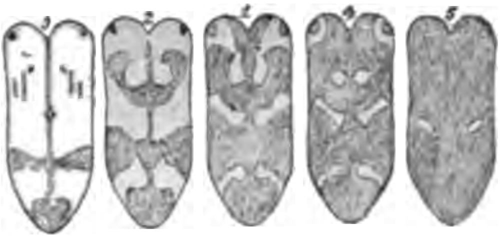
## TRICHODES ORNATUS Say.

BY GEO. H. HORN, M. D.

In consequence of some correspondence lately had in reference to this insect and the apparent incredulity that two forms seen, which differ less than any two figures on the subjoined illustration, were merely varietal differences, I have thought it desirable to select a few forms illustrative of variation in two directions from the typical form.

The thorax varies in color from blue to green, through brassy and cupreous. The elytra are usually deep blue or blue-black, but may be bright blue or green. The pale bands are of a Cicindeloid type, and may be bright yellow or orange-yellow. The legs are blue, the anterior four tarsi pale, but those specimens with the wider bands of yellow often have pale tibiæ also.



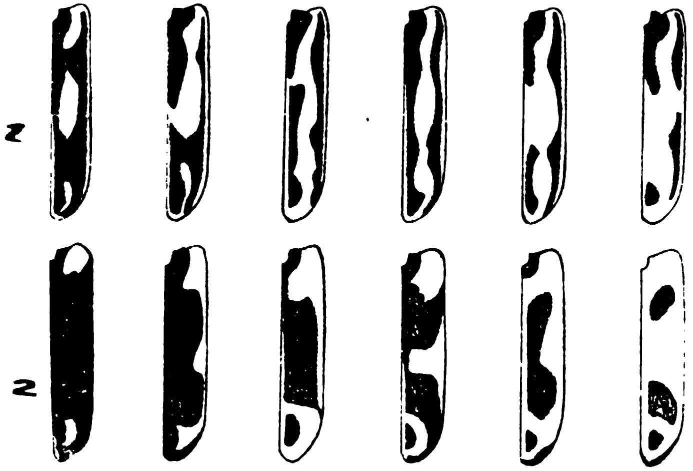
On the accompanying illustration are five specimens selected from my series showing the extent of variation in the markings. The central figure is the common form in the region from which Say obtained his specimens, near the base of the Rocky Mountains. The humeral and the median band are often united along the outer side. Fig. 2 represents a form quite usual in Owen's Valley, Cal., and western Nevada, the yellow being quite equal to the blue color. Fig. 3 shows a form from Utah in which the humeral and median bands have coalesced into a large pale area enclosing but a slight trace of the blue in the form of a spot and two short lines. This is the most extreme form I have yet seen in the direction of the expansion of the yellow bands.

Fig. 4 represents a contraction of the bands, the humeral breaking up, while the other two do not reach the lateral margin, several specimens from Oregon illustrate this. In Fig. 5 the elytra are entirely blue or green, with a small post-median spot of obliquely oval form. The spot varies in size and position, and from the indications I have no doubt that specimens will occur with elytra entirely blue. These one-spotted specimens must not be mistaken for ***bisignatus***, which has quite a large spot of red color contiguous to the margin and other specific characters.

As a rule; the hotter the climate in which the specimens were native. the greater the extent of the yellow color; those represented by fig. 3 are from the extreme southwest of Utah. In colder, and especially damper climates, the blue color predominates; figs. 4 and 5 are from Oregon, although typical forms occur abundantly there also.

The variety ***tenellus*** is from San Diego and Fort Yuma, in California. Its form is more slender than normal, and the markings are as in fig. 2, although a little wider, showing less blue.

In continuation of the same idea I reproduce the illustrations of the variations of the elytral markings of two species of Psoa published by me in the "Trans. Am. Ent. Soc." 1886, p. xv.



The upper line represents *P. maculata;* the lower, *P. quadrisignata.* The genus Psoa, although belonging to the Bostrichinæ, resembles Trichodes in form, the elytra having a ground color of blue or green, the markings yellowish to red. The markings of *quadrisignata* are suggestive of *Trichodes ornatus* in the fourth figure, while *maculata* is rather of a vittate type.

It is hoped that these notes and figures will be at least cautionary to those who see in slight differences of the metallic surface lustre, or the extent of markings a sure indication of a new species.

## ELEMENTARY ENTOMOLOGY.

### Seventh Paper.—The Abdomen—Internal Anatomy.

The third and last region of the body is the abdomen. The abdominal segments are not so closely united to each other as are the segments of the head and the thorax; they consequently possess a freedom of motion between themselves not to be found in the two former regions of the body.

The abdominal segments sometimes receive the special name of *urites.* Their typical number is eleven (Packard), but in different insects varies from three to eleven.

Besides the three pairs of jointed legs, situated near the front end of the body, and which correspond to the (thoracic) legs of the imago, many larvæ have other thicker, fleshy legs, termed *prolegs, prop-legs,* or *false legs.* The prop-legs are not jointed, and end in a circle of minute hooks; they are placed on that part of the larva corresponding to the abdomen of the imago, in which state they are not usually represented. The nymphæ of those insects which undergo only an incomplete transformation have six jointed, thoracic legs. Of the larvæ that undergo a complete transformation, some have no legs, as maggots; others have six jointed, thoracic legs; others still, as caterpillars, have six jointed thoracic legs, and from ten to sixteen jointless, abdominal prop-legs. Some of those insects which do not pass through any transformation have jointed abdominal legs; in this particular they differ from the definition of an insect as given in the first paper.

In many insects which have an incomplete transformation, there is in the nymph a pair of jointed appendages to the last abdominal segment. These are represented in the corresponding imagos, in which state they much resemble antennæ; they are called *anal forceps*, *cerci*, or *caudal setæ*. Male insects have sometimes one or two pairs of jointless *claspers* at the apex of the abdomen. Female insects may have the abdomen furnished with a sawing, piercing, or boring organ—the *ovipositor*, by which the eggs are implanted into various substances. A *sting* is an ovipositor modified to form an organ of defence; it exists in females only, of some insects. *Cornicles*, *nectaries*, *siphuncles*, or *honey tubes*, are small tubes, two in number, found on the abdomen of plant-lice and certain other insects, through which a liquid ("honey-dew") is secreted.

With this we complete our sketch of the external anatomy of insects. Their internal anatomy is hardly an elementary study, owing to its difficulty, but from its importance it cannot be overlooked here.

If a cross-section were made of the body of a cat, or other back-boned animal, the relative positions of the main nerve (spinal) cord, the main blood vessel (aorta) and the alimentary canal would be seen to be as follows. The most dorsal of the three would be the nerve cord; below it, that is, on its ventral side, would be the main blood vessel; below the latter would be the alimentary canal, the most ventral of the three. These positions would, of course, be equally true for the human species.

But the relative positions of these three great organs in Arthropods (and consequently in insects) is different. Here the main blood vessel is the most dorsal, below it is the alimentary canal, below the latter is the nerve cord, which is here the most ventral of the three.

The body wall of an insect is made up of three (microscopic) layers,—

1. An outer chitinous layer, or *cuticle*.
2. A median cellular layer, or *hypodermis*.
3. An inner layer, or *basal membrane*.

The alimentary canal has its beginning at the mouth opening and extends as a more or less convoluted tube, divided into various parts, through the length of the body, to its external opening (*anus*) in the apex of the abdomen. The principal parts of the canal are the *pharynx*, situated with the head, connected by the slender *œsophagus* with the *crop*, situated in the thorax, or more posteriorly. Following the crop is the *proventriculus*, or *gizzard*, a grinding organ with strong muscular walls. The *stomach*, *ventriculus*, or *chylific ventricle* succeeds, situated in the abdomen. After this is the *intestine*, which may sometimes be subdivided into three parts, the *ileum*, or small intestine (immediately following the stomach), the *colon*, or large (thicker) intestine, and the *rectum*, or terminal part. The crop and gizzard are sometimes absent,

The alimentary canal is composed of three coats, the outer, or *peritoneal*, the middle, or *muscular*, and the inner, or *mucous*. The canal is held in place by retractor muscles, but principally by exceeding numerous branches of the main tracheæ (Packard).

The appendages of the alimentary canal are the *salivary*, the *cæcal*, and the *anal* glands, and the *malpighian vessels*. The salivary glands open near the mouth. In some larvæ (caterpillars) they are the source of the silk. The cæcal glands open into the stomach; their secretion resembles the pancreatic secretion of backboned animals. The anal glands open into the hind part of the intestine; their secretion is usually offensive and constitutes an organ of defense. The malpighian vessels are long, slender tubes opening into the fore part of the ileum; they are analogous to the kidneys of higher vessels. Insects have no true liver, its functions being performed by the walls of the stomach (Siebold quoted by Packard).

The circulatory system consists of a *dorsal vessel* or heart, an aorta, and a few branches of the latter. The heart is a jointed organ of a varying number of chambers, one behind the other, corresponding in position to the segments (of the fore part of the abdomen) in which they are situated. The chambers are separated by valves permitting motion in but one direction—from behind forwards. A pair of lateral valves in each chamber allows entrance, but prevents exit. The heart is contained in a cavity—the *pericardial sinus*, separated from the other organs by a membrane—the *pericardial diaphragm*, pierced by many openings. At its fore end the heart opens into the aorta, a simple tube running to the head where it may or may not divide into short branches. In either case the vessels apparently end in the head as open tubes. The circulation is believed to be as follows: By the successive contraction of the chambers of the heart, the blood is forced forwards from the hind into the fore chambers and thence into the aorta. When the blood reaches the end of blood vessels in the head it passes from them directly into the body cavity, bathing the internal organs, flowing in regular currents, but not enclosed by walls. Finally, it passes through the openings of the pericardial diaphragm, and enters the heart through the lateral openings of the chambers.

The blood consists of a usually colorless, or sometimes yellowish, greenish, or reddish liquid, in which float colorless, sometimes nucleated corpuscles. P. P. C.

———o———

## Additions and Corrections to the list of Dragonflies (Odonata) of Manchester, Kennebec Co., Maine.

BY MISS MATTIE WADSWORTH.

(See ENTOMOLOGICAL NEWS, vol. i, pp. 36, 55.)

**1a. Calopteryx æquabilis Say.**

1890, June 21, one ♂ taken near brook.

**6a. Enallagma ebrium Hagen.**

A single ♂ taken several years ago, recently identified.

**6b. Enallagma civile Hagen.**

One ♂, also recently identified.

**16a. Neuræschna vinosa Say.**

1890, August 11, one ♂ flying over brook.

**18a. Gomphus (Undetermined species).**

One ♀ taken several years ago.

**32. This species given as "Cordulia new? species" is C. cynosura variety.**

1890, June 21, one ♀, one ♂, near brook. June 28, one ♂ in pasture.

**37a. Plathemis trimaculata De Geer.**

1890, June 18, 21, ♂ ♂ seen near woods; 28, one ♀ in woods; June 30, July 2, 18, 29, near woods, brook and roadside. August 4, one ♀ in woods.

**43. Diplax new? species is D. ornata Ramb.**

1890, July 9, one ♂ by roadside; August 6, one ♂ in meadow; August 7, one ♂, three ♀ ♀ in pasture; August 12, one seen flying; August 20, one ♂ in pasture.

**44. Diplax semicincta Say.**

One ♂ taken some time ago, recently identified.

The total number of species from Manchester known to me, including the undetermined *Gomphus*, is now fifty species. Of these two are Calopterygina, eleven Agrionina, seven Æschnina, eight Gomphina, nine Cordulina, thirteen Libellulina.*

As before each species has been identified by Mr. Philip P. Calvert, of Philadelphia, who has given me much assistance in the study of the Odonata.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

**☞ See change of wording in notice of Identification of Insects.**

WE give as a supplement to the present number an exchange list, which will save the entomologist the trouble and labor of making out written lists, either of duplicates or desiderata, to send to correspondents. Numbers are also unsatisfactory, as they have to be copied from a list and referred to a list by the recipient. The editor has often been in need of such a list, and thus it originated All that is necessary is to mark the list and put it in an envelope and send it on its way, hoping thereby to receive many fine additions to one's collection.—ED.

ALETIA ARGILLACEA Hub.—*Apropos* of a note on this insect in the December number of ENT. NEWS (p. 154) by Prof. Kellicott, I wish to state that *argillacea* has been very rare the past season, if indeed it has appeared at all, at Buffalo, N. Y. About October 1st, when it should be most abundant, I was frequently out after moths, but failed to detect a single example of this species.—E. P. VAN DUZEE.

WE have recently heard from Mr Wm. H. Ashmead, who writes from No. 11 W. Alvensleben Strasse, Berlin, that he is having a good time studying the large collections in the Museum. "The collection of exotic Lepidoptera is simply grand, and, for a lepidopterist, is simply a paradise. The Hymenoptera, especially in the micros, are poorly represented but I find a good many interesting forms in what they have among the macros."

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* In a letter dated November [illegible]th 1892, accompanying the MS of the above "Additions," Miss Wadsworth writes "Some species quite common before have been much less so this season, particularly [illegible] which, in 1891, was one of the most common species. This year I saw but one specimen and that on June [illegible]th." So far as my observations go this remark is also true for the relative abundance of *[illegible]* in Delaware County, Pa., in 1891 and 1892. PHILIP P. CALVERT.

Mr. C. W. JOHNSON's report of capture of *Neonympha Mitchellii* at Dover, N. J., in rocky and hilly territory, leads me to make a correction as to its habits in Michigan. When first found I took only a few specimens, and all on a rather dry meadow, near a wet meadow and marsh. Since then I find that they are much more common in the marshy portion of the territory referred to. I have taken many specimens of *Neonympha canthus*, *N. eurytris*, *N. sosybius* and *N. Mitchellii*,—the *sosybius* in Florida—and find *Mitchellii* much closer to *sosybius* in habits of flight than to either of the others. It flies low, for short distances, in a weakly manner, and is best started by beating up, or by walking rapidly and noisily through the grass. *Sosybius* is stronger and quicker on the wing, is a more "artful dodger," and flies a little farther. If there is more than one brood of *Mitchellii* in a season, the last one begins to fly July 1st. I have taken it from July 1st to 10th. As far as I can tell it comes in quickly and goes off the field rather abruptly after a short period of life.

I. N. MITCHELL.

DEVELOPMENT OF DIBOLIA ÆREA.—The habits of this little beetle appear to be familiar, but the following notes on its period of development may be of interest: The larvæ were found abundantly on Plantain (*Plantago major*) at LeClaire, Iowa, about Aug. 1, 1890. They make an opening in the epidermis of the leaf which they enter, gradually eating their way. Sometimes a larva makes a tunnel, then goes back and starts a branch to it. If the leaf becomes too dry, some will leave and enter a fresh one, but in ordinary cases they remain in their leaf until they are ready to pupate. When full grown they are 3-4 mm. in length. The period of pupation is fourteen days. Up to the twelfth day the pupa is yellow, on that day a slight coloring of the eyes is noticed, the following day the tarsi become black, and the fourteenth day the beetle appears, becomes entirely black and begins to move about. Eight beetles lived five days after emergence without food; after Plantain leaves were introduced they ate freely.—P. H. ROLFS, Ames, Ia.

I HAVE observed this past season an unusual number of the larvæ of *Sphinx quinquemaculata* on the tomato vines. In the Summer of 1881 they were a veritable pest in this locality, but since then they were scarce, only an occasional isolated specimen being found until the late Summer, when they were again abundant. The country people are very much afraid of them, and one frequently hears extravagant tales of horrible suffering from the effects of their sting.

I find the observations made relative to the limited range of *Satyrus alope* (January number) corroborated by my own knowledge of the species in this locality as I have observed the same individuals in the same locality until they died.

On August 12th I took a larva of *C. regalis* feeding on a plum tree; I fed it plum leaves for a week when it pupated. This is, to me, a new food-plant for *C. regalis*, as I have never found it on any thing but the walnut.—STEPHEN BALDY, Catawissa, Pa.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending: 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Twelve names, if possible, will appear in each issue of NEWS, according to number. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

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H. MERSKE.—1, *Cicindela 16-punctata;* 2, *Cicindela vulgaris*, var.; 3, *Macrodactylus subspinosa;* 4, *Cicindela pusilla*, var. *cyanellus;* 5, *Epitragus canaliculatus;* 6, *Necrophorus marginatus;* 7, *Chrysochus auratus;* 8, *Trox sonoræ;* 9, *Hippodamia convergens;* 10, *Chrysomela scalaris.*

E. WILKINSON.—2, *Carpophilus palipennis;* 4, *Sphærophthalma orchis;* 5, *Bombus pennsylvanicus* ♂; 6, *Orthosoma brunneum;* 7, *Necrophorus americanus;* 8, Solpugidæ (belongs to); 9, *Allorhina nitida?* 10, *Eleodes longicollis;* 11, *Hippomelas cælatus;* 12, *Psiloptera dilaticollis.*

CHAS. FUCHS.—1, *Eleodes hispilabris;* 2, *E. carbonaria*, smooth var.; 3, *E. quadricollis* ?; 4, *E. obsoleta*, var.; 5, *E. carbonaria*, var. *soror;* 6, *E. extricata;* 7, *Discogenia marginata;* 8, *Eleodes cordata;* 9, *E. consobrina;* 10, *E. cordata;* 11, *E. parvicollis;* 12, *E. obscura.*

G. D. B.—1, *Catocala concumbens;* 2, *Ctenucha virginica;* 3, *Microcælia obliterata;* 4, *Heliophila unipuncta;* 5, *Hadena sputatrix;* 6, *Agrotis messoria?* 7, *Plusia contexta;* 8, *Eustrotia carneola;* 9, *Hypena* sp.; 10, *Tetracis crocallata;* 11, *Pyrophila pyramidoides;* 12, *Metanema quercivoraria*

From Haddonfield, N. J., wingless females of a Geometrid moth, perhaps genus *Anisopteryx*.

## Entomological Literature.

BULLETIN FROM THE LABORATORIES OF NATURAL HISTORY OF THE STATE UNIVERSITY OF IOWA, vol. ii, No. 1, contains the continuation of the monograph entitled, "The Pselaphidæ of North America, by E. Brendel, M. D., and H. F. Wickham (concluded), 85 pp., 3 plates, 63 figs. Full descriptions with synoptic tables of the species are given.

THE ENTOMOLOGIST, November, 1890.—Additions to the British List of Deltoids, Pyralids and Crambi since 1859 (with plates), by Richard South. The sexes of LEPIDOPTERA, by T. D. A. Cockerell. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste. Entomological notes, captures, etc. Doings of Societies.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, November, 1890. How do Coccids produce cavities in Plants? by W. M. Maskell. Notes on the LEPIDOPTERA of Digne (Basses Alpes), by A. H. Jones. Entomological notes from Aden and Colombo, by J. J. Walker. Notes concerning *Psocus quadrimaculatus* Latreille, of which *Ps. subnebulosus* Steph. is a synonym, by Robert McLachlan. Aculeate Hymenoptera collected by J. J. Walker at Gibraltar and in North Africa, by Edw. Saunders. Notes and Captures, Doings of Societis, etc., finish the number.

Transactions of the Royal Society of South Australia, vol. xiii, pt. 1.—Descriptions of Australian Lepidoptera, pt. 1, by E. Meyrick. Further notes on Australian Coleoptera, by Rev. T. Blackburn.

A Contribution Toward a Knowledge of the Mouth Parts of the Diptera, by Prof. J. B. Smith (from Trans. Am. Ent. Soc.). This is an interesting essay of twenty pages with twenty-two figures; very little has been written on the anatomy of the mouth parts of Diptera, and Prof. Smith's paper is an important addition to the literature of the subject. He states that he studied each organ in its entirety, in its relation to others, and in its development, and that he studies were morphological rather than anatomical.

The Entomologist's Monthly Magazine, December, 1890.--Notes on the British species of the genus *Anthonomus*, with a description of a species new to Britain, by Rev. Canon Fowler. Hymenopterological notes, by P. Cameron. Description of a new species of the genus *Phanæus*, by B. S. Nevinson. Trichoptera observed in the Exmoor District in Autumn, by R. McLachlan. Observation on some British and exotic Coccidæ, by J. W. Douglas. Descriptions of two new species of *Euplœa* from the South Sea Islands, by Hamilton H. Druce. Great flight of *Culex*, *Tipula* and *Tetramorium* in New Zealand, by W. W. Smith. Meyrick's Pyralida of Europe, by Prof. C. H. Fernald *Trypeta bigeloviæ* n. sp., by T. D. A. Cockerell. On a new species of *Tomoderus* from Japan, by G. C. Champion. Note on the genus *Dischidus*, id. *Bidessus unistriatus* in East Norfolk, id.; *Anisotoma treipkei*, etc., at Aviemore, by R. W. Lloyd. *Danais archippus* at Eastbourne, by A. H. Clarke. *Chærocampa nerii* near Dartmouth, by Henry F. Owen. Description of the larva of *Phoxopteryx upupana*, by B. A. Bower. Insects in the Scilly Isles, by C. W. Dale.

Bulletin No. 11, November, 1890, Iowa Agricultural Experiment Station. The Potato Stalk Weevil (*Trichobaris trinotata*). The Apple Curculio (*Anthonomus 4-gibbus*). A new Currant Borer (*Hyperplatys aspersus*). The life-histories and remedies against these injurious insects are given (illustrated). These entomological articles are by Prof. C. P. Gillette.

We have received the following from Prof. C. V. Riley, U. S. Entomologist: Insecticides and Means of Applying them to Shade and Forest Trees, by C. V. Riley, M.A., Ph.D. The Insectivorous Habits of the English Sparrow, by C. V. Riley. Insects Affecting the Hackberry (various species of *Celtis*), by C. V. Riley. These entomological papers are all from various government publications.

Annals of the New York Academy of Sciences, vol. v, Nos. 456.—Coleopterological Notices, by Capt. Thos. L. Casey. This is the continuation of a lengthy paper containing descriptions of many new species (pp. 97 to 198). Catalogue of Lepidoptera found within fifty miles of New York City, with their food-plants, by Wm. Beutenmüller. This is a useful list, as it considers Rhopalocera and Heterocera, both macro and micro, and will be a guide to collectors in the territory covered.

Memoirs and Proceedings of Manchester Literary and Philosophical Society, vol. iii, fourth series. Hymenoptera Orientalis, or contributions to a knowledge of the Hymenoptera of the Oriental zöological region, by P. Cameron, pt. 2, pp. 239–284, 2 plates; contains new genera and species.

Opuscula Entomologica, C. G. Thomson, xiv, Fasciculus. Lund, 1890; xlii, Cremastius and allied genera;* *Demophorus* n. gen.; xliii (synopsis of the genus *Bassus* Fab.*), *Zootrephus*, *Promethus*, *Homoporus*, n. gen.; xliv, Contributions to the Insect Fauna of Sweden,* Coleoptera and Hymenoptera.

Entomologiske Meddelelser udgivne af Entomologisk Forening ved Fr. Meinert. Andet Bind, Hefte Tredie [and] Fjerde. Kjobenhavn, 1890.—This publication being in Danish, is beyond the Reviewer. Hefte Tredie (part 3) contains a biologic and anatomic paper on *Anthophora parietina* Fabr. by C. Wesenberg-Lund, 1 pl.

L'Auxiliaire, Organe libre de la Federation des Apiculteurs Francais, Amiens 2e Annee, Nouvelle serie, Nos. 2. 2–9, February–September, 1890.—The issues of this paper contain many articles on all subjects of interest to those engaged in Bee culture, as well as on other topics not relating to entomology. Of entomological articles other than those on apiculture, we note one on "The Flies of the Pears" (*Cecidomyia nigra* and *Sciara piri*) by E. André.

Compte-Rendu. Societe Entomologique de Belgique, 4 Oct. 1890.—Note on the Cicindelidæ of Chota-Nagpore,* by E. Fleutiaux. Note on some Spherionidæ,* by A. Lameere. First note on the Coleoptera collected by M. Ed. Van Beneden in South America, by P. Pelseneer.

Revue Biologique du Nord de la France, 3e Annee, No. 2, November, 1890.—Notes on the Thysanoura, iv, by R. Moniez. Materials for the Entomological fauna of Flanders, 4th century, Coleoptera, by A. P. de Borre.

Annalen des k. k. Naturhistorischen Hofmuseums, v, No. 3, Wien, 1890.—The Hymenopterous group of the Sphecinæ. I. Monograph of the natural genus *Sphex* L. (sens. lat.) II. Abtheilung, by F. F. Kohl (see Ent. News, vol. i, p. 164). Ichneumonid studies,* by Dr. J. Kriechbaumer; *Apechoneura*, *Opisorhyssa*, *Rhyssonota*, *Dyseidopus*, new genera of Pimplidæ; *Thalessa? histrio*, White Mountains; *Opisorhyssa flavopicta*, N. Amer.?; new species from North America.

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* Contains new species other than North American.

LE NATURALISTE (Paris), Nov. 15, 1890.—Habits and Metamorphoses of *Larinus ursus* Fab., by Capt. Xambeu. On the horn of a chrysalis of *Deilephila euphorbiæ*, by P. Chretien; with woodcuts.

A SYNONYMIC CATALOGUE OF NEUROPTERA ODONATA, OR DRAGON-FLIES. With an appendix of fossil species, by W. F. Kirby, F.L.S., F.E.S., etc., London, Gurney & Jackson; Berlin, R. Friedländer & Son, 1890, 8vo, pp. ix, 202. Price, 16s. ($4.00)

This important work, although published early in September, 1890, was not seen by the reviewer until Dec. 6, 1890. A review of it has been published (in French) by Baron de Selys Longchamps in his "Causeries Odontologiques," No. 2 (Compte-Rendu. Soc. Ent. Belg., Sept. 6, 1890, pp. clvii–clxiv; see ENT. NEWS, vol. i, p. 164), which has been seen by the present reviewer.

Pages 1–164 of the catalogue contain the living species, giving the synonymy, the chief bibliographical references and the general distribution of each species. Appendix I, pp. 165–176, does the same for the fossil species. Appendix II, pp. 177–187, comprises additions and corrections. A general index of all the specific and generic names, both accepted and synonymic, completes the work.

The following table shows the classification adopted, with the number of genera and species listed, including the additions and corrections, as collected by the reviewer:

| | Living species throughout the world. | | Fossil species throughout the world. | | Living species in N America north of Mexico. | |
|---|---|---|---|---|---|---|
| | Genera | Species | Genera | Species | Genera | Species |
| Family 1. LIBELLULIDÆ. | | | | | | |
| Subfamily 1. Libellulinæ....... | 102 | 503 | 3 | 26 | 16 | 67 |
| " 2. Corduliinæ....... | 22 | 144 | 1 | 2 | 7 | 37 |
| Family 2. ÆSCHNIDÆ. | | | | | | |
| Subfamily 1. Gomphinæ....... | .... | .... | 10 | 30 | .... | .... |
| Division 1. Gomphina........ | 36 | 228 | .... | .... | 8 | 48 |
| " 2. Cordulegastrina | 15 | 38 | .... | .... | 4 | 9 |
| Subfamily 2. Æschininæ....... | 25 | 112 | 2 | 12 | 6 | 24 |
| Family 3. AGRIONIDÆ. | | | | | | |
| Subfamily 1. Agrioninæ........ | 33 | 234 | 3 | 6 | 2 | 18 |
| ( Calopterygina auct.) | | | | | | |
| Subfamily 2. Cœnagrioninæ.. | .... | .... | 7 | 27 | .... | .... |
| Div. 1. Pseudostigmatina... | 5 | 20 | .... | .... | .... | .... |
| " 2. Normostigmatina... | 77 | 561 | .... | .... | 12 | 56 |
| | 315 | 1810 | 26 | 103 | 55 | 259 |

Baron de Selys has already pointed out that Mr. Kirby makes a number of changes in the names of well known genera and species, chiefly on the ground of priority. To these Baron de Selys strongly objects; his views are entirely in accord with those of the present reviewer, who thinks that they will be adopted by Odonatists generally. The chief changes, so far as they affect North American dragonflies, are as follows: the first in each pair of names being the one used by Mr. Kirby. *Sympetrum* = *Diplax*, *Lib. lydia* Dru. = *trimaculata* DeGeer, *Lib. vibrans* Fabr. = *lydia* Dru. (Hag., 1861), *Diastatomma* = *Ophiogomphus*, *Aeshna* (without *c*) = *Gomphus Aeschna* (with *c*) retained = *Aeschna*, *Agrion* = *Calopteryx*, *Micronympha* = *Ischnura*, *Cœnagrion* = *Agrion*. Even if it be a fact that many of the changes here noted rest on a priority of a few years, inasmuch as the names to be supplanted have been in general use for many (in some cases over fifty) years, it seems to the reviewer totally unnecessary to change them. The rule of priority may be very good in the abstract; but when it conflicts with that better rule of long and common use, it is more to be honored in the breach than in the observance. For himself, the reviewer proposes to continue using the old nomenclature until more convincing reasons for changing are presented.

In spite of these serious faults, this Catalogue is a most useful and valuable work. It furnishes us, in a commodious form, with a key to our present knowledge of the Odonata, both living and fossil. The most excellent index at the end of the volume affords a ready means of locating any name which has been proposed in this group of insects. Finally, no student of the Odonata can do without it.—PHILIP P. CALVERT.

ENTOMOLOGISCHE NACHRICHTEN, xvi, No. 19, October, 1890.—New Ichneumon flies from north and middle Germany,* by Dr. Kriechbaumer. On *Hylemyia penicillaris* Rnd. and some similar species, by P. Stein. *Pelecium Drakei*,* n. sp. of the Coleopterous tribe of the Stomidæ, by G. Quedenfeldt; from Matto-Grosso, S. America. No. 20, October, 1890.—Entomological notes, by Prof. Dr. F. Thomas (on *Chionea*, *Niptus*, *Chrysopa*, *Leiosomus*, *Byturus*). On *Ornithomyia turdi* Latr., and on the author of *Bibio anglicus*, V. v. Roder. Victor Antoine Signoret, by L. Fairmaire. No. 21, November, 1890.—A contribution to the German Hymenopterous Fauna,* by C. Verhoeff.

## Doings of Societies.

A Regular Meeting of the Entomological Section of the Academy of Natural Sciences was held Oct. 23, 1890, Director Dr. Horn in the chair. Members present: Ridings, Laurent and Skinner. Associates: Fox, Westcott and Dr. Castle. Dr. Stephens, of Plymouth, Mass., visitor. A paper entitled, Mouth Parts of Diptera, by Prof. J. B. Smith, was presented and referred to the Publication Committee. Dr. Horn referred to his studies on Throscidæ and Eucnemidæ for the Biologia Centrali-Americana. The material had been received on April 15th and the corrected proof returned October 15th. The completed work will make sixty-five quarto pages. He also spoke of a contemplated work on Agrilus. Mr. Ridings mentioned the fact that whiskey attracted ants, and that they were intoxicated by it. Dr. Horn spoke of the habits of *Xyleborus pyri*, a beetle which bores in fruit trees. He had found *pyri* identical with the European *X. dispar*, having compared them side by side. A number of fine additions have been lately made to the Cabinet of the Society, among them forty-two specimens of Noctuidæ, representing thirty-one species new to the collection, presented by Mrs. A. T. Slosson. A number of fine Hesperidæ from Mr. Martindale, and a collection of Hymenoptera and Diptera from Mr. Ernest Seeber, all collected in his own yard.

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* Contains new species other than North American.

Meeting held Nov. 27, 1890. Director Dr. Horn presiding. Members present: Martindale, Laurent and Skinner. Associates: Welles and Johnson. Dr. Horn described the results of his studies on *Aræoschizus* and *Cryptohypnus*. The genus *Aræoschizus* is composed of small and rare beetles about the size of ants, and look much alike. The forms of head, elytra, etc., were described and illustrated. *Cryptohypnus* is represented by small Elater-like beetles which have been in confusion on account of the characters not being well understood. The differential diagnoses based on anatomical differences were considered. The relationships of the European and American species were discussed. Dr. Horn did not consider any of them identical, but parallel species. He also stated that he had discovered two new species of *Eleodes* with long tails to the elytra, although belonging to different groups. One had a peculiar male character of the tibia which was described. The nomination of Mr. Charles S. Welles as a member was read. Mr. David Jayne Bullock was duly elected a member of the Section.

Meeting held Dec. 8, 1890. Dr. Horn in the chair. Members present: Martindale, Blake, Laurent, G. B. Cresson, Skinner. Associates: Calvert, Welles, Dr. Castle, Fox. The Director announced the death of Dr. Samuel Lewis. Mr. Martindale exhibited his new form of cabinet drawer for LEPIDOPTERA with the upper and underside of glass, and having movable strips for pinning on the specimens. This gives the opportunity to examine the underside of the specimens without removal (see NEWS, vol. i). Mr. Calvert exhibited a female of *Libellula pulchella* with an imperfectly developed wing. A drawing on the blackboard was made illustrating the peculiarities in venation. The specimen had been loaned to him by Mr. C. W. Johnson. and was taken in the upper part of the city. He also stated that in 1865 Mr. Scudder reported dragonflies in great abundance at Hermit Lake, in the White Mountains. On a visit there, himself, he did not find them nearly as plentiful as stated by Mr. Scudder. It was of interest to compare the different collecting experiences after an interval of twenty-five years. Kirby's Catalogue of the Odonata of the world was exhibited and commented on. The question of priority was discussed as set forth in the list. Dr. Skinner exhibited some fine specimens of entomological photography, the work of Mr. J. F. Sachse, editor of the "American Journal of Photography." The following were elected officers to serve for the coming year: Director, Dr. G. H. Horn; Vice-Director, H. C. McCook, D.D.; Treasurer, E. T. Cresson; Recorder, Henry Skinner, M.D.; Publication Committee, Philip Laurent and Henry Skinner, M.D.; Corresponding Secretary, Angelo Heilprin; Conservator, Dr. Henry Skinner.

ENTOMOLOGICAL SOCIETY OF WASHINGTON, Nov. 6, 1890.—Mr. Erwin F. Smith was elected a member of the Society.

Mr. Schwarz exhibited a larva of the genus *Carabus* with deformed maxillary palpi. The right palpus is normally formed, except that the suture between the first and second joints is nearly obliterated; the left palpus is only 3-jointed, with the joints nearly transverse, as in *Calosoma*.

Mr. Marlatt exhibited three female specimens of a species of the Tryphonid genus *Metopius*. The strikingly large and peculiar ovipositor of this species was described, and reference was made to the literature relating to this genus, from which it appears that the female has never been properly characterized, if indeed it has ever been described at all.

Dr. Marx gave some additional notes on his experiments with the bite of *Lathrodectus*, but stated that the results had been wholly negative.

Mr. Howard read a paper entitled, "The Habits of Pachyneuron," in which he referred to the breeding records of this genus of Chalcididæ, recording twenty distinct rearings in North America, and made a number of interesting deductions therefrom.

Mr. Schwarz read a paper on the food-habits of *Corthylus punctatissimus*. This Scolytid, previously known to infest the subterranean part of the stems of Sugar Maple saplings, was found in large numbers in the roots and subterranean stems of the common huckleberry, *Gaylussacia resinosa*, in the vicinity of Washington during September and October. In this connection Mr. Schwarz presented the description of a second North American *Corthylus*, *C. spinifer*, from semi-tropical Florida.

Mr. Marlatt presented a paper on the Final Molting of Tenthredinid Larvæ, in which he described the molting undergone by the larva of nearly all saw-flies after full growth is reached and just prior to spinning up or entering the ground to pupate, describing also the accompanying change of color. Reference was made to the scanty literature of the subject and the explanation of this molt by Cameron on the ground of protection.

Mr. Townsend read a paper on the Leptid (Dipterous) genera *Triptotricha* Lw. and *Agnotomyia* Will. Mr. Townsend does not believe that the species of *Triptotricha*, with only one front tibial spur, should, without other distinguishing characters, be generically separated from those possessing two.

Mr. Fernow called attention to the ravages of *Gastropacha monacha*, particularly in Bavaria, stating that it has probably been introduced in the present instance from Italy.

General discussion followed on a novel method employed in Europe of collecting and destroying this Bombycid.

C. L. MARLATT,
*Recording Secretary.*

# EXCHANGE LIST.

# BUTTERFLIES OF AMERICA NORTH OF MEXICO.

Compiled by Dr. HENRY SKINNER.

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### Papilio

ajax
  *a* abbotii
  *b* walshii
  *c* marcellus
  *d* telamonides
americus
asterias
  *a* asteroides
  *b* calverleyii
  *c* alunata
bairdii
brevicauda
cresphontes
daunus
eurymedon
  *a* albanus
indra
machaon
  *a* aliaska
mylotes
oezhualcoytl
nitra
palamedes
pergamus
philenor
pilumnus
polydamas
rutulus
  *a* arizonensis
  *b* ammoni
sinon
thoas
troilus
turnus
  *a* glaucus
zolicaon

### Parnassius

clodius
  *a* menetriesii
eversmani
  *a* thor
nomion
smintheus
  *a* behrii
  *b* hermodur
  *c* nanus

### Leptalis

melite

### Neophasia

menapia
  *a* suffusa
terlooii

### Pieris

amaryllis
beckerii
ilaire
monuste
  *a* phileta
napi
  *a* acadica
  *b* bryoniæ
  *c* borealis
  *d* flava
  *e* frigida
  *f* hulda
  *g* oleracea
  *h* pallida
  *i* venosa
nelsoni
occidentalis
  *a* calyce
protodice
  *a* vernalis
rapæ
  *a* immaculata
  *b* marginalis
  *c* manni
  *d* nov-angliæ
  *e* yreka
sisymbri
virginiensis

### Nathalis

iole
  *a* irene

### Anthocharis

ausonides
  *a* coloradensis
cethura
creusa
genutia
hyantis
julia
lanceolata
morrisoni
olympia
pima
reakirtii
rosa
sara
stella
thoosa

### Callidryas

agarithe
argante
cipris
eubule
philea
sennæ
statira

### Kricogonia

fantasia
lanice
lyside
  *a* terissa

### Gonepteryx

mærula
clorinde

### Meganostoma

cæsonia
eurydice
  *a* amorphæ

### Colias

alexandra
behrii
boothii
  *a* chione
chippewa
christina
  *a* astræa
edwardsii
elis
emilia
eurytheme
  *a* ariadne
  *b* eriphyle
  *c* keewaydin
harfordii
hecla
  *a* glacialis
  *b* hela
interior
meadii
moina
nastes
occidentalis
  *a* chrysomelas
palæno
pelidne
philodice
  *a* anthyale
  *b* albinic
  *c* melanic
  *d* nig
  *e* virida
scudderii

### Terias

damaris
delia
elathea
gundlachia
jucunda
linda
lisa
  *a* flava
mexicana
nicippe
  *a* flava
proterpia
westwoodii

### Thecla

acis
acadica
affinis
adenostomatis
alcestis
apama
augustus
auretorum
autolychus
behrii
calanus
  *a* lorata
californica
  *a* cyanus
castalis
chalcis
clytie
columella
crysalus
  *a* citima
dryope
dumetorum
edwardsii
eryphon
favonius
fotis
fuliginosa

grunus
halesus
henrici
humuli
ines
iroides
irus
  *a* arsace
  *b* mossii
itys
læta
leda
m-album
melinus
  *a* pudica
nelsoni
  *a* exoleta
  *b* muirii
niphon
ontario
pœas
putnami
sæpium
  *a* fulvescens
sheridanii
siva
smilacis
spinetorum
spadix
strigosa
sylvinus
tacita
tetra
titus
witfeldii

### Feniseca

tarquinius

### Chrysophanus

arota
cupreus
dione
dorcas
editha
epixanthe
florus
gorgon
helloides
hermes
hypophleas
  *a* americana
  *a* fasciata
  *c* feildeni
mariposa
rubidus
sirius
snowi
thœ
virginiensis
xanthoides
zerœ

### Lycæna

acmon
afra
alce
amica
amyntula
ammon
anna
annetta
antiacis
  *a* behrii
  *b* mertila
aquilo
ardea
aster
battoides
clara
comyntas
couperii
cyna
dædalus
exilis
fulla
filenus
glaucon
gyas
heteronea
icaroides
  *a* maricopa
isophthalma
kodiak
lotis
lycea
lygdamus
  *a* oro
marina
monica
pembina
pheres
phileros
podarce
pseudargiolus
  *a* arizonensis
  *b* cinerea
  *c* lucia
  *d* marginata
  *e* neglecta
  *f* nigra
  *g* violacea
rustica
sæpiolus
sagittigera
scudderii
shasta
sonorensis
speciosa
striata
theonus
xerxes

### Lemonias

ares
  *a* cleis
cythera
duryi
mormo
nais
palmerii
virgulti

### Eurygona

abreas

### Calephelis

australis
borealis
cænius
nemesis

### Eumenia

atala
minyas

### Libythea

bachmani
carinenta
larvata

### Heliconius

charitonia

### Danais

archippus
berenice
strigosa

### Ceratinia

lycaste
  *a* negreta

### Mechanitis

californica

### Dircenna

klugii

### Colænis

delila
julia

### Agraulis

vanillæ

### Euptoieta

claudia
hegesia

### Argynnis

adiante
alberta
alcestis
aphrodite
artonis
atlantis
atossa
behrensii
bellona
bischoffi
boisduvallii
bremnerii
butlerii
calippe
carpenterii
chariclea
  *a* obscurata
chitone
clio
columbia
coronis
cybele
cypris
diana
edwardsii
egleis
electra
epithore
  *a* kreimhild
eurynome
  *a* erinna
freya
  *a* tarquinius
frigga
  *a* saga
halcyone
helena
hesperis
hippolyta
idalia
  *a* ashtaroth
improba
inornata
lais
laura
leto
liliana
  *a* baronii
macaria
montinus
monticola
  *a* purpurascens
montivaga
myrina
nausicaä
nevadensis
  *a* meadii
nitocris
nokomis
opis
polaris
rhodope
rupestris
  *a* irene
semiramis
triclaris
zerene

### Melitæa

acastus
albiplaga
alma
anicia
arachne
augusta
baroni
bollii
brucei
chalcedon
  *a* dwinellei
chara
colon
cooperi
definita
dymas
editha
fulvia
gabbii
harrisii
helvia
hofmanni
  *a* helcita
leanira
  *a* obsoleta
mcglashani

minuta
nubigena
  *a* wheeleri
nympha
palla
perse
phæton
  *a* superba
  *b* phæthusa
quino
rubicunda
sterope
taylori
theckla
ulrica
whitneyii
wrightii

**Phyciodes**
batesii
camillus
  *a* pallida
  *b* mata
carlota
montana
mylitta
nycteis
  *a* drusius
orseis
phaon
picta
pratensis
tharos
  *a* marcia
  *b* morpheus
  *c* packardi
vesta

**Eresia**
frisia
punctata
ianthe

**Synchlœ**
adjutrix
crocale
erodyle
janais
mediatrix

**Cystineura**
amymone

**Grapta**
comma
  *a* harrisii
  *b* dryas
faunus
gracilis
hylas
interrogationis
  *a* fabricii
  *b* umbrosa
j-album
progne
rusticus
satyrus
  *a* marsyas
silenus
  *a* oreas
silvius
zephyrus

**Vanessa**
antiopa
  *a* hygiæa
californica
milberti

**Pyrameis**
atalanta
cardui
  *a* elymi
  *b* ate
carye
huntera

**Junonia**
cœnia
  *a* orythia
genoveva

**Anartia**
jatrophæ

**Eurema**
lethe

**Eunica**
monima

**Callicore**
clymena

**Timetes**
chiron
coresia
eleucha
petreus

**Diadema**
misippus

**Limenitis**
arthemis
  *a* laminia
  *b* proserpina
disippus
  *a* floridensis
eros
  *a* obsoleta
hulstii
lorquini
ursula
  *a* arizonensis
weidemeyerii
  *a* sine-fascia

**Heterochroa**
californica

**Apatura**
alicia
antonia
  *a* montis
celtis
clyton
  *a* proserpina
  *b* ocellata
cocles
flora
leila

**Paphia**
morrisonii
troglodyta

**Ageronia**
feronia
fornax

**Victorina**
steneles

**Debis**
portlandia

**Neonympha**
areolatus
canthus
eurytris
gemma
henshawi
mitchellii
rubricata
sosybius

**Cœnonympha**
ampelos
brenda
californica
  *a* ceres
  *b* eryngii
  *c* galactinus
  *d* pulla
elko
inornata
kodiak
ochracea
pamphiloides

**Erebia**
disa
  *a* mancinus
discoidalis
epipsodea
  *a* brucei
fasciata
haydenii
magdalena
rossii
sofia
tyndarus
  *a* callias
vesagus

**Geirochilus**
tritonia

**Hipparchia**
dionysius
ridingsii

**Satyrus**
alope
  *a* texana
  *b* maritima
  *c* nephele
  *d* olympus
  *e* boopis
  *f* incana
ariane
ashtaroth
baroni
charon
gabii
meadii
œtus
paulus
pegala
silvestris
sthenele
wheeleri

**Chionobas**
calais
californica
crambis
chryxus
gigas
iduna
ivallda
jutta
macounii
nevadensis
norna
semidea
subhyalina
tarpeia
taygete
uhleri
varuna

**Carterocephalus**
mandan
omaha

**Ancyloxypha**
numitor

**Copæodes**
arene
eunus
myrtis
procris
  *a* waco
wrightii

**Thymelicus**
garita
poweschiek

**Pamphila**
aaroni
accius
agricola
arabus
arpa
attalus
baracoa
bellus
bimacula
brettoides
brettus

byssus
cabelus
campestris
carus
cernes
cestus
chusca
colorado
columbia
comus
delaware
deva
dion
draco
ethlius
eufala
fusca
harpalus
hianna
horus
huron
juba
  *a* viridis
lagus
lasus
leonardus
licinus
loammi
lunus
maculata
manataaqua
manitoba
manitoboides
mardon
massasoit
melane
meskei
metacomet
metea
milo
morrisonii
mystic
napa
nemorum
nereus
nevada
ocola
oregonia
osyka
otho
  *a* egeremet
ottoe
palatka
panoquin
pawnee
peckius
phylæus
pittacus
pontiac
pratincola
phylace
python
rhena
rhesus
ruricola
sabuleti
sassacus
siris
slossonæ
snowi
sylvanoides
taxiles
uncas
verna
verus
vestris
viator
vitellius
yuma
zabulon
  *a* hobomok
  *b* pocohontas

**Amblyscirtes**
ænus
cassus
eos
nanno
nysa
samoset
simius
textor
vialis

**Pyrgus**
centaureæ
cæspitalis
domicella
  *a* nearchus
ericetorum
locutia
nessus
oceanus
philetas
tessellata
  *a* montivagus
xanthus

**Nisoniades**
afranius
alpheus
ausonius
brizo
clitus
funeralis
icelus
juvenalis
lucilius
martialis
nævius
pacuvius
persius
petronius
propertius
somnus
tatius
tristis

**Systasea**
zampa

**Pholisora**
catullus
ceos
hayhurstii
lena
libya
pirus

**Achlodes**
thraso

**Eudamus**
albofasciatus
bathyllus
cellus
dorus
drusius
electra
epigena
hesus
hippalus
lycidas
moschus
nevada
proteus
pylades
simplicius
tityrus
zestos

**Erycides**
amyntas
batabano
sanguinea
texana
urania

**Pyrrhopyga**
araxes

**Megathymus**
cofaqui
neumœgenii
yuccæ
  *a* coloradensis

## ENTOMOLOGICAL NEWS,

a journal devoted to the news and gossip always so interesting to entom logical workers. To those remote from the centres of information it cann fail to be of the utmost importance, since it will keep the student posted what is being accomplished in serials and by monographs at home and abroa and will give a résumé of the doings of the various entomological societi throughout the world. A valuable feature of the journal is that, und certain restrictions, insects sent for determination will, as far as possible, accurately named, and the results promptly announced in its pages. Pu lished monthly, excepting July and August, by the Entomological Sectic of the Academy of Natural Sciences, with the co-operation and financial a of the American Entomological Society, and under the advisory directi of practical entomologists.

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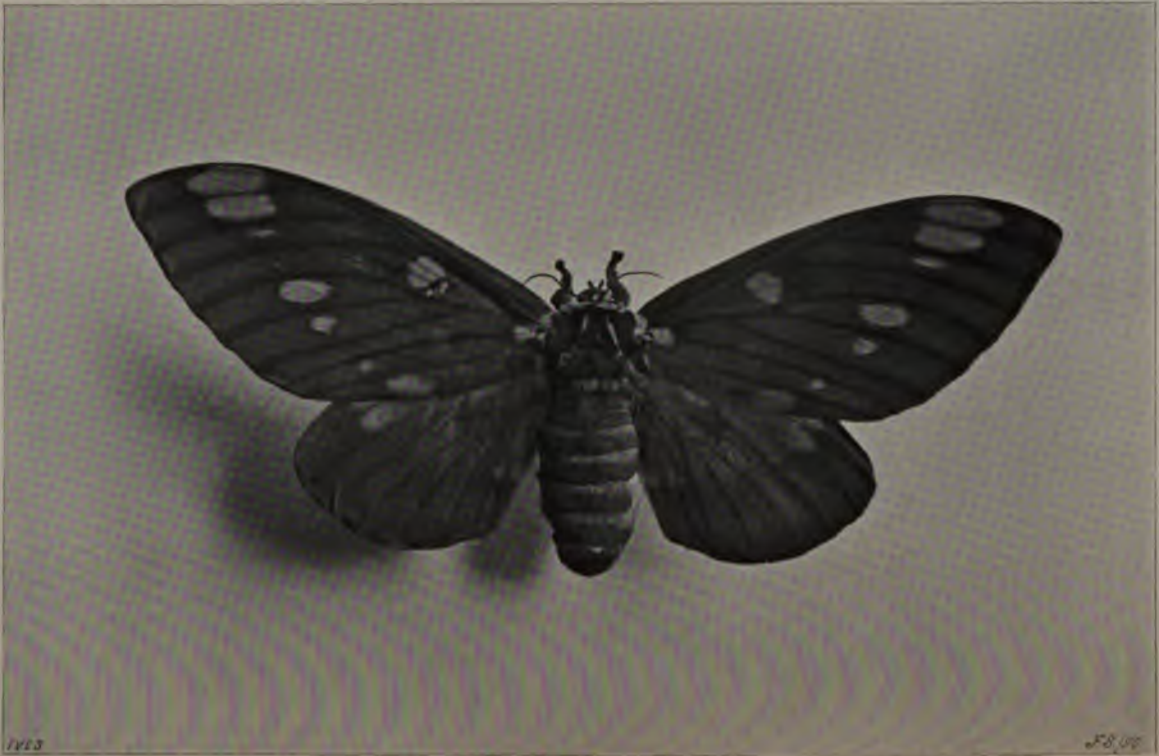

CITHERONIA REGALIS.

# ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. II. FEBRUARY, 1891. No. 2.

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Illustration No. 2.—About ten months are supposed to have elapsed, and we now present our larva figured in Vol. II, Pl. I, transformed into an imago. This was also photographed by Mr. J. F. Sachse, editor of the "American Journal of Photography," to whom we are indebted for the plate.—ED.

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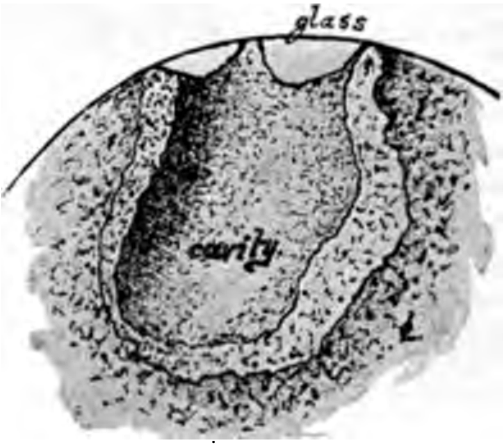
## NOTES ON COLEOPTERA.

BY PROF. OTTO LUGGER.

**Cremastochilus Knochii** Lec.—This beetle is rather abundant in the vicinity of our Experiment Station (St. Anthony Park, Minnesota), and occurs here from early Spring till late in fall. One field seems to be its favorite breeding ground. It is a field with poor and rather sandy soil, thoroughly exhausted by constant croppings, so that even oats can no longer be produced successfully. Being simply held on speculation for building lots, it is decidedly neglected for farming purposes. This field forms, however, not a bad hunting ground for a number of insects, and, besides other species of beetles *Harpalus erraticus* Say, *Bolboceras farctus* and *lazarus* Fab. and *Cremastochilus Knochii* Lec. are very common. With the exception of the latter all have to be dug from the soil. But as they prefer to make their abode in solid ground, in a narrow path, they are easily found, as their presence is always indicated by a perfectly round hole, the size of which showing the particular species which made it. The *Cremastochilus* also frequents this path, and is usually found slowly crawling about, and most frequently several are found in close proximity to each other. A large number of small ants have also nests in this hard-trodden soil; these nests are underground galleries, with exceedingly small openings towards the light, not much larger than the holes made by the heads of common pins.



Observation 1.—A *Cremastochilus* surrounded by numerous ants, was gradually pushed by them in a certain direction. The beetle was perfectly quiet, and offered no resistance to the ants, nor did it assist them in any perceptible way. As the process of moving such an immense object was exceedingly slow, I did not observe the ultimate destination of the procession.

Observation 2.—A *Cremastochilus* was found sitting right over one of the small entrances of an ant nest. With slow and very deliberate actions the beetle gradually enlarged the hole under it, and in the course of nearly seven hours disappeared from view. During all this time not a single ant appeared in its vicinity, nor did any assist the beetle in its efforts to penetrate to the nest below.

Observation 3.—Very similar to observation 2, only a number of ants assisted the beetle by removing the dirt scraped out by the latter.

Observation 4 —Early in Spring I found a number of these beetles mating above ground. Confining some in a low round jar, filled with earth to a depth of three inches, they soon disappeared from the surface. They lived in this jar for about two months, mostly hidden in the earth, but whenever the jar was exposed to the warming influence of the sun the beetles reappeared upon the surface and moved about rather actively for such slow insects. Several times they attempted to fly away. As I wished to obtain the eggs, I investigated the soil, and found a very peculiar structure in it, as illustrated in figure in natural size. The cavity was rather smooth inside and large enough to harbor the five pairs of beetles living in the jar. No eggs were discovered, but all ten beetles were found dead in the room made by themselves. As the upper roof of the nest was broken up in removing the soil from the jar, I do not know whether there was one or more entrances to this room.

Next season I intend to establish a formicarium with such beetles, with the view of studying the relations between them and the ants.

If I recollect right the locality for *Omus submetallicus* Horn seems to be in doubt. I have recently obtained a specimen from Washington.

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# LIST OF LEPIDOPTERA TAKEN AT ELECTRIC LIGHTS IN BROOKLYN, WITH NOTES THEREON.

BY RODRIGUES OTTOLENGUI, M.D.S.

I am only a beginner, this Summer having been my first season, nevertheless I am told that my catch has been a remarkable one; remarkable in that it shows what may be done by thorough work in a single section. Seventy-five nights this Summer my sister and myself were out with our nets and bottles. The first night, early in May, we walked about aimlessly till we found an electric light near the ground, and here, and at the one next to it, we took fifty insects, the first being a Luna, which my sister captured. I will say here that, though we took other specimens of Luna, afterward we never took one having, like this one, a distinct border at the edge of all four wings. Subsequently, we tried other localities, but never had much luck; therefore, we finally went nowhere else; thus the following list shows what can be done in a single secluded, well-lighted spot near foliage, in the heart of a great city. I will mention the number taken when the insect is rare, or when only a few were captured. Of the others we took, or refused quantities, except of Geometridæ.

## SPHINGIDÆ.

Of Sphingidæ we never took a specimen till after ten o'clock. *Thyreus Abbottii*, two males; *Deilephila lineata*, one male; *Philampelus achemon*, one male. Of this beautiful species I saw another specimen, but failed to get it. It alighted on a tree, and after climbing I saw no chance to get it in my net. I returned to the ground and took a bottle, but though I was most careful in trying to place the bottle over him, he dropped between the leaves and was seen no more. This lesson, however, proved of value, and later I secured a valuable insect under similar circumstances as will be told. *Everyx myron*, three males and one female; *Smerinthus geminatus*, two males; *Calasymbolus* (*Smerinthus*) *myops*, three pairs; *Ceratomia amyntor*, eight males; *Daremma undulosa*, one pair; *Phlegethontius carolina*, eight males and two females. One of these males is the valuable insect to which I referred. It is wood-brown, about the same shade as *Ceratomia amyntor*. Mr. Henry Edwards tells me that there is an insect in South America exactly like my specimen, which is counted a species, but which he has thought to be but a variety of S. Carolina, hence the extreme interest in finding this light variety in this latitude. This was at rest in the tree, as was the other which I lost. Profiting by experience, I took it with my fingers, thumb and finger above and below the thorax. It is only slightly ruffled on the upper side and not noticeable. *Phlegethontius celeus*, two males; *Sphinx drupiferarum*, one female; *Sphinx kalmiæ*, one male. Total, 40; not bad, I think, for late night hunting.

## ZYGÆNIDÆ.

*Alypia octomaculata*, two pairs; *Eudryas grata*, three pairs; *Scepsis fulvicollis*.

BOMBYCES.—*Arctia nais*, one male and one female; *Arctia arge*, one pair; *Pyrrharctia isabella*. From a lot of these I have picked out a set of seven males which show a gradual variation from having but a single spot on each wing to having very large black spots on the wings. *Leucarctia acrea;* males fairly common; took but one female. *Spilosoma virginica*, *Hyphantria textor*, *Euchætes collaris*, two pairs; *Halisidota caryæ*. I took a number of these, one pair only, having a spot on the secondaries, *Orgyia leucosigma*. One of my specimens Mr. Edwards says is the largest that he has ever seen. It measures one and a half inches. *Apatelodes torrefacta*, one male; *Datana angusi*, one male; *Datana intergerrima*, *Datana perspicua*, five pairs; *Nadata gibbosa*, five males. In one the silver spots on primaries are almost invisible. *Lophodonta ferruginea*, two males, one having secondaries all gray. *Edema albifrons*, one pair; *Seirodonta bilineata*, one pair; *Cœlodasys unicornis*, one pair; *Cœlodasys* ——*?*; one male only. Several well known collectors have failed to identify this. *Janassa lignicolor*, one male; a beautiful specimen. *Heterocampa unicolor;* a beautiful pair of this which I believe is difficult to take perfect. The male was taken in May and the female in last week of July. *Cerura borealis*, one male; *Cerura occidentalis*, one male; *Cerura cinerea* one pair; *Actias luna*, six males; *Philosamia cynthia*, *Callosamia promethea*, *Callosamia angulifera*, two females; *Platysamia cecropia*, *Hyperchiria io*, thirty males. I took many beautiful varieties of this one the primaries almost all cream color, another heavily shaded with black. *Eacles imperialis*, thirty males and three females. *Citheronia regalis*, two pairs; *Dryocampa rubicunda*, four males. *Clisiocampa americana*, *Artace punctistriga*, four males; *Cossus centerensis*, one male. I think this is the first reported from this locality. *Prionoxystus robinæ*, three females.

NOCTUÆ.—*Habrosyne scripta*, ten pairs. A remarkable catch I am told; very bright, beautiful specimens. *Raphia frater*, *Apatela occidentalis*, one pair; *Apatela lobelilæ*, *Apatela hasta*, one pair; *Apatela americana*, one male; *Apatelis hamamelis*, one male; *Apatela innotata*, one male; *Apatela dissecta*, one male; *Apatela oblinita*, *Agrotis C-nigrum*, *Agrotis plecta*, *Agrotis cupida*, one male; *Agrotis verticalis*, one male; *Agrotis annexa*, one female; *Agrotis malefida*, *Agrotis ypsilon*, *Agrotis saucia*, *Mamestra picta*, *Mamestra arctica*, one pair; *Mamestra renigera*, *Hadena devastatrix*, *Hadena vulvivaga*, *Hadena* ———*?*; one specimen only. Several collectors have failed to identify this.

*Prodenia commelinæ*, one pair; *Euplexia lucipera*, one female; *Nephelodes minians* and var. *violans*, of each one male; *Gortyna nebris* and var. *nitella*, of each one male: *Achatodes zeæ*, one male; *Heliophila albilinea*, *Heliophila phragmitidicola*, *Heliophila unipuncta*, *Heliophila pseudargyra;* oddly enough, I took but one specimen of this. *Heliophila pseudargyra* var. *callide*, one female; *Orthodes infirma*, one pair; *Cucullia convexipennis*, one pair; *Cucullia asteroides*, *Cucullia* ———? ; absent in three large collections. *Telesilla cinereola*, two pairs; *Plusia ærea*, *Plusia precationis*, *Plusia ni*, *Plusia simplex*. *Tamilla nundina*; *Melicleptria thoreani* this I do not find in Grote's List, and I may have the specific name wrong.* *Melicleptria* ———? Mr. Henry Edwards thinks this an entirely new species. *Heliothis armiger*, *Ligranthecia spragnei Chamyris cerintha*, one pair; *Drasteria erechtea* and var. *agricola*, *Euclidia cuspida*, *Paralelis bistriaris*, *Homoptera edusa*, *Homoptera lunata*, *Epizeuxis americalis*, one female; *Chytolyta morbidalis*, *Hypena evanidalis*, *Hypena scabra*, *Hypena baltimoralis*.

## GEOMETRIDÆ.

*Chærodes transversata*, *Caberodes confusaria*, *Ennomos alniaria*, *Eudalimia subsignaria;* took both sexes. *Eudropia hypocharia*, *Metrocampa margaritata*. *Angerona crocataria*. *Anagoga occiduaria*, *Acidalia ennucleata*, *Acidalia quinqueliniaria*. *Caterva catenaria*, *Tephrosia canadaria*, *Paraphia subatomaria*. *Anticlea vasiliata*, *Petrophora diversilineata*, *Boarmia crepuscularia*, *Eubæa cognitaria*.

In making out this list I have followed Grote. In addition to those enumerated I took fifty specimens of *Zeuzera æsculi* found recently in this country. This insect was first reported in Newark. I have not yet heard of others taking it in Brooklyn. I found it quite common and enduring for three weeks. Had I known the the rarity of it, and value for exchange, I could easily have taken two hundred. I took, however, only two females, and those under peculiar circumstances. One night it rained so hard that I abandoned all idea of hunting, and made a social call. Returning about eleven o'clock I walked home, the rain having ceased. Walking along an asphalt roadway, lighted by electric lamps, I found hundreds of insects swamped on the wet pavement. Finally, I came to a little pool of water in which I noticed two large insects floundering about. I took them out, placed them in an envelope, and hurried home, where I transferred them to a bottle. They were two females of the *Zeuzera*, and when dried made excellent specimens; antennæ perfect, and markings brighter than any of the males. I took and mounted during the season 2000 specimens exclusive of diurnals.

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* No. 960, Grote's List Ed.

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## ELEMENTARY ENTOMOLOGY.

Eighth Paper.—INTERNAL ANATOMY (concluded).

The nervous system consists of a series of paired nerve-knots, or *ganglia*, connected by two nerve cords (*commissures*), and extending the entire length of the body. Typically, there is a pair of ganglia to each segment of the body, but usually the number of pairs is less than the number of segments, owing to the union of adjacent pairs. This nerve chain lies below (ventral to) the alimentary canal for the greater part of the body, but in the head, the two commissures pass upwards, one on each side of the œsophagus to a mass of united ganglia lying on the dorsal side of the canal in the head. This mass is the *brain*, or *supra-œsophagial* ganglion; it is thought to be formed by the union of several pairs of ganglia corresponding to the number of segments of which the head is formed.

From the ganglia of this nerve chain, nerves are given off to surrounding organs. Certain other ganglia are connected with this nerve chain which do not correspond in position to the segments. These latter ganglia supply by their branches the alimentary canal and the tracheæ.

The organs of sight are the simple and the compound eyes.*

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* See ENTOMOLOGICAL NEWS, vol. i, p. 104.

In 1888 and 1889, Prof. Felix Plateau published in French the results of his studies on the vision of Arthropods. Dr. David Sharp, of London, gave an account of these experiments in the "Transactions of the Entomological Society of London" for 1889, p. 397, et seq., concluding with two "general impressions" which he has "derived from the study of Prof. Plateau's valuable experiments."

1. "That insects in motion are largely guided by the direction of light and the existence of lights and shades. . . . . ."

2. "That there is at present no evidence at all that the light-perceptions are sufficiently complex to be entitled to be called seeing; but that, as the large develdpment of the compound eye permits the simultaneous perception of movement, its direction, and of lights and shades over a certain area, a dragonfly may pursue and capture another insect without seeing it in our sense of the word seeing. (Trans. l. c. pp. 407, 408)."

Certain sense organs, supposed to be those of hearing, exist in the first abdominal segment, and in the tibiæ of the first pair of legs in various insects (Grasshoppers).

Organs of smell are believed to exist in the antennæ of many insects.

Organs of taste are thought to be present in the labium and maxillæ of some insects.

The antennæ play the part of organs of touch to a great extent.

The muscles of an insect are very numerous. They are slender, faint yellowish fibres, transversely striated, not enclosed in sheaths. They are arranged in correspondence with the segments of the body wall and the joints of the appendages.

The respiratory system in insects consists of air tubes, or tracheæ.* They have their external openings, called *spiracles*, or *stigmata*, in the pleura of the thoracic and first eight abdominal segments, one pair to each segment. The number of pairs is thus never more than eleven, and is usually less. In the thoracic segments, at least, the spiracles are situated in the peritremes, and are usually guarded by hairs, or a chitinous piece, acting as a valve. A short trachea runs inwards from each spiracle to a large longitudinal trachea, one of which runs along each side of the body. These two large tracheæ are connected by cross-tracheæ, corresponding in position to the segments of the body wall. From the two main tracheæ and the cross-tracheæ, numerous branches are given off in all directions, to all parts of the body, thus supplying the organs directly and not indirectly through the blood as in vertebrates. So numerous are the branches of the tracheæ that they also serve to hold other internal organs in position.

The tracheæ are sometimes dilated into air-sacs, which also decrease the specific gravity of the insect. Air-sacs occur only in imagos of flying insects, and not in larvæ, or in imagos of creeping insects.

Aquatic insects breathe either (1) air which they take from above the water's surface, or (2) air which is mixed with the water. In the first case the insect carries, by its wings, or other means, a bubble of air obtained at the water's surface; or, its spiracles are prolonged into long tubes which reach to the water's surface while the insect is below it. Insects breathing the air which is mixed with the water, are provided with so-called *tracheal gills.* These are usually thin, thread-like, or plate-like expansions of the body wall, richly furnished with tracheæ. The thin walls of these gills permit an interchange between the air in the water and the air in the tracheæ. Tracheal gills may be entirely external, or may exist within the hind part of the intestine. In that they are supplied only with tracheæ containing air to be purified, tracheal gills differ from true gills of fishes and crustaceans, whose vessels contain blood to be purified.

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* See ENTOMOLOGICAL NEWS, vol. i, pp. 71, 141

"The act of respiration consists in the alternate dilatation and contraction of the abdominal segments, the air entering the body chiefly at the thoracic spiracles. As in vertebrates, the frequency of the acts of breathing increases after exertion. . . . . 'In the pupa and larva state, respiration is performed more equally by all the spiracles, and less especially by the thoracic ones.' " (Packard)

Insects are unisexual, *i.e.*, the males and females are different individuals.* No external characters, such as shape, color, etc., can be given to distinguish between the sexes of all insects. The reproductive organs are contained in the abdomen. Those of the male are the *testes*, which are paired glandular bodies, secreting the *sperm*, or fertilizing fluid, in which are numerous, very small, tadpole-like *spermatozoa*. Each testis has a duct, the *vas deferens*, which may dilate into a *vesicula seminalis*, after which the two vasa deferentia unite to form the *ductus ejaculatorius*, which opens into the external intromittent organ (*penis*), usually situated on the ventral side of the abdomen near its apex.

The female reproductive organs are the pair of *ovaries*. in which the eggs (*ova*) are found. The duct of each ovary (*oviduct*) unites with its fellow and forms the *vagina*. The vagina is connected with the ovipositor,† or has a free external opening (*vulva*), usually situated on the ventral side of the abdomen near its apex. "Connected also with the vagina are one or more pouches (*receptacula seminis*), within which the sperm is received and stored." The sperm "retains its fertilizing properties for a long time. Thus the queen bee or ant, pairs but once, though she may continue to lay fertile eggs for years. The fertilization of the eggs of insects takes place at the time they are laid. There is in one end of the shell of the egg, one or more pores known as *micropyles*. Through these the spermatozoa enter the egg as it passes the opening of the receptacula seminis. In some cases, at least, it is not necessary that an egg should be fertilized in order that the embryo should develop. This has been proven with the Honey Bee. But so far as is known the unfertilized eggs of the bee produce only males" (Comstock).

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* "Cases not unfrequently occur in which from arrest of development of the embryo, the sexual organs are imperfectly developed, so as to present the appearance of being both male and female" (Packard). Such individuals are termed *hermaphrodites*

† See ENT. NEWS, vol. ii, p. 9. Opening into the vagina is sometimes a poison sac communicating with the sting.

A non-sexual reproduction alternating with a sexual reproduction occurs in certain insects, as plant lice.

All insects are produced from eggs, and are therefore called *oviparous*. In some cases, however, the eggs are retained within the body of the mother until after hatching. Such insects are termed *ovoviviparous*. P. P. C.

# ANOTHER IMMIGRATION THEORY.

BY E. P. VAN DUZEE.

Chancing to pick up a copy of the "Canadian Entomologist" of November, 1887, while browsing among some old entomological papers—a favorite pastime with me—I lighted on a "Note on Southern Moths found in the North," by A. R. Grote, A.M. Here, after reiterating his "theory" that *Erebus odora* and other of the southern species of moths that are constantly being reported from northern localities are mere "wind visitors or immigrants;" he says: "This is my theory of immigration from the South; no other writer agrees to it or advocates it. Right or wrong, it is my own." Whether this theory has been proved or disproved by more recent writers I know not, but the capture of an *odora* in this city, under somewhat peculiar circumstances, it seems to me might shed a little light on the subject.

Early in the past season one of our young collectors, Mr. J. C. Will, took an example of this insect in a wholesale fruit house in this city among a large pile of bananas recently received from the South. The thought naturally presents itself: may not this and others of these stray visitants have been introduced through the agency of commercial transportation, either as a pupæ or imagos? Many subtropical creatures (spiders, scorpions, centipedes, etc.) have been found here in banana cargoes, and why not moths? The importation of bananas here has increased enormously of late years, and a corresponding increase is noticeable in the number of *odora* taken. Further confirmatory evidence might be found in the food habits of the *odora* larvæ if these were better known.

A somewhat parallel case is the occurrence of the large southern grasshopper, *Dictyophorus reticulatus* Thunb., near Rochester, N. Y., from whence I have received, through the kindness of Mr. A. E. Romer of this city, a full grown example. When captured it was in company with several others of its kind near one of the large nurseries for which that city is famous. In this case it seems reasonable to presume a cluster of eggs had been introduced with southern nursery stock, probably imbedded in the earth attached to the roots, and the prolonged warm weather had enabled them to perfect their growth. As it is not included in Prof. Smith's Catalogue of the Insects of New Jersey it is very unlikely that it could survive our severe Winters and become a member of our fauna.

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# A NEW SPECIES OF NYSSONIDÆ.

BY WILLIAM J. FOX.

**Bothynostethus distinctus** n. sp.

♀.—Black, shining; clypeus, sides of face, space between antennæ, posterior orbits and sides of metathorax, with silvery pubescence; tubercles, post-scutellum, line on anterior tibiæ, spot on intermediate and posterior tibiæ yellowish white; head finely punctured, clothed with moderately long, pale brown pubescence; face with a well marked, longitudinal central impressed line, which extends from between the base of the antennæ almost to the lower ocellus, the front presents before the anterior ocellus and at the sides of the posterior ones, a deep slit or furrow, the lateral furrows oblique, anterior margin of clypeus, in the middle, with two large, separated teeth; between the teeth and the lateral angles of the clypeus are situated two much smaller teeth; third joint of antennæ shorter than either the fourth or fifth, the fourth is slightly longer than the fifth; joints 8–10 are about equal; eyes diverging toward the vertex, the inner margin slightly bent inward above the centre of the face; prothorax emarginate above in the middle, with a yellowish white, narrow line, interrupted at the emargination; beginning behind the emargination of the prothorax are two parallel, strongly marked lines, extending to the centre of the dorsulum; scutellum sparsely punctured, with a median impression, which is more distinct posteriorly; the suture between the dorsulum and scutellum deep and broad, the sides denticulate; post-scutellum divided by a median impressed line; metathorax with a broad and deep longitudinal channel, the channel broadening at the base of the posterior surface of metathorax into a somewhat cordate pit, base of metathorax smooth, a little beyond a curved, deeply foveolate furrow extends from the central channel to the anterior-lateral angles of the metathorax; between these furrows and the sides, which are rugose, is a finely punctured space, posterior face before apex marked with deep pits. Wings hyaline at base, the apical half fuliginous; nervure and stigma black; costal and subcostal nervures confluent; tegulæ rufo-piceous, tibiæ and tarsi covered with whitish pile. Abdomen finely punctured, clothed with pale brown pile, which is more dense laterally, and on the fifth and sixth segments above, and on the posterior margins of the segments beneath, the posterior margins of the segments above smooth, rufo-piceous; pygidium large, rounded at tip, covered with appressed pale hair, venter reddish beneath. Length .35 inch.

♂.—More slender than the ♀, the anterior margin of the clypeus subtruncate, or slightly sinuate; the anterior tibæ in front and the tarsi are rufous; pygidium short, obtuse at tip, with appressed pubescence, otherwise as in the ♀. Length .30 inch.

Three specimens, Camden County N. J., July 22d, and Aug. 10, 1890.

In this, we add to our fauna a genus that seems to be intermediate between the *Nyssonidæ* and *Larridæ*, which is well defined by the unarmed metathorax, the intermediate tibiæ having but one spur at apex and the mandibles being notched on the outer margin as in *Larra*.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

☞ See change of wording in notice of Identification of Insects.

IN Mr. Liebeck's article on the Cicindelidæ of a Season, published in the December number (vol. i) of the NEWS he states that he knew of but two specimens of *Cicindela tortuosa* ever taken in New Jersey. I would like to place on record the capture of a third specimen, which was taken alive, and was found in company with *C. hirticollis;* the specimen was captured at Atlantic City, N. J. It seems strange that Mr. Liebeck should remember but two specimens of this species ever taken in New Jersey, when it was at Mr. Liebeck's own suggestion that the specimen in question received a bath of benzine to bring out the markings more clearly.

PHILIP LAURENT.

THE following description of a variety of *Papilio turnus* may be of interest to the readers of the NEWS: The specimen, which is a ♂, was taken on the 6th of July, 1890, at Mt. Airy, Pa. The specimen differs from the normal ♂ in the almost entire absence of the row of yellow markings in the black border of the anterlor wings, only the two yellow markings in the extreme apical portion of the wings being present, while the row of yellow markings in the border of the posterior wings is narrowed down to a mere dash, the yellow of which is thickly interspread with many gray scales. Of the many descriptions and figures of the varieties of *P. turnus* that have been published from time to time, none describe the above variation.—PHILIP LAURENT.

RETINIA COMSTOCKIANA Fernald, occurs abundantly in yellow pines at Sugar Grove, near Lancaster, Ohio. Serious damage results in consequence, as the infested twigs and branches invariably die. At present, October, the larvæ are lining their mines preparatory to hibernation. The habits of the insect here agree well with those given by Prof. Comstock (Report Dept. of Agriculture, 1879), whose observations were made at Ithaca, N. Y. I have found that weevil follows the moth's larva as a borer in the dead twigs.—Prof. D. S. KELLICOTT.

PLATYCERURA FURCILLA Packard. At the above-mentioned station, late in September, I took several larvæ, apparently of *P. furcilla*. They were all found concealed among the yellow pine needles; in confinement they were rarely seen feeding. Dr. Lintner has described, with his usual accuracy, the larva and its habits in "Entomological Contributions," No. 3, p. 131.—Prof. D. S. KELLICOTT.

THE ELECTRIC LIGHT AS AN INSECTICIDE.—Any one taking the trouble to examine the contents of the globe surrounding an arc light, in the morning, will be astonished at the immense number of insect remains, consisting of all orders. By far the greater number are small lepidopterous forms, and, according to my experience, the Tortricidæ outnumbering all the rest. Many Neuroptera fall victims to the light, among them large numbers of the "aphis lions," whose larvæ feed on the aphides, or plant lice; thus we lose one of the agriculturist's best friends. Many species quite rare in collections may be taken in this way, though very few perfect specimens are to be had, owing to the intense heat of the carbons, the slightest touch of which burns the wings. Prof. Lintner made a microscopical examination of the contents of a single globe, and estimates that the débris he inspected represented 33,000 insects, and he believes the average number destroyed in a night by a single lamp at nearly 100,000. On one occasion I saw nearly three pints of bodies, legs and wings emptied from a single globe by a man who replaced the carbon in the morning.

C. A. B.

HUMORS OF COLLECTING.—Like all other things, entomology has its ludicrous side, as some such squibs as the following will verify: A few years ago while out collecting with a fellow-entomologist, not far from

Gloucester, N. J., we got in the neighborhood of some tumble-down shanties; at the back gate of one that opened on a lot covered with weeds stood a woman, with arms akimbo, intently watching our manœuvres, when my friend captured a specimen of *Limenitis ursula*, at which the curiosity of the aforesaid female was sufficiently aroused to ask the question, "What do you do with them things?" "Oh," said he, "we preserve them." Lifting up her hands in apparent disgust, she said, "Sakes alive, what'll people eat next!" On another occasion, while collecting along the Camden and Atlantic Railroad, I saw, in a narrow gully that ran parallel to the track, a portion of a dead snake, which I saw move, and, concluding there was a "bug" at work, I turned it over and found a male *Necrophorus americana;* while looking for the female, which I presently found, a countryman, walking along the track, stopped and looked down at me just as I dropped it in my bottle and said, "What do you do with them air things?" but before I had time to frame an answer he continued, "do you make medsin of 'em?" I said "yes;" he then said, "yaas, I've heern tell of that afore."—C. A. B.

IT may be of interest to the readers of the NEWS to know that here in Oregon we are sympathizers and sufferers with our eastern friends from that dread pest of hop growers the hop louse (*Phorodan humuli*), being the same as has been doing so much damage heretofore in the Eastern States. It has been described and written about extensively by the Department of Agriculture at Washington, D. C., and a further description would be out of place here. The hop crop of Washington for the year 1890 has been estimated at 38,000 bales, that of Oregon some 18,000 less, making a total of 58,000 bales, which may be figured at least within a very reasonable limit at 200 pounds to the bale and 30 cents per pound, or $60 per bale, or $3,480,000 for the crop. The loss from the hop louse, where I have been able to observe, was at least one-fourth of what was gathered, or one-fifth of the entire crop, and from the best I have been able to learn the loss was about the same in other places; those exposed to the morning sun and sheltered from the wind by woods, etc., suffered most, the upper river bottoms in general next, while some places were almost free from them. By taking one-fourth of those saved, the larger amount of which was more or less damaged, it shows the remarkable loss of $870,000 from those little insects alone, so inconspicuous, yet in numbers so formidable. In some localities they came too late to do much damage, but where they came early they carried destruction with them. From the above figures we conclude it would be well for hop growers to avail themselves of the benefits to be derived from the painstaking researches of our government and let it guide them to the avoidance, if possible, of a similar visitation next year.—AURELIUS TODD.

A FOREST PLAGUE IN BAVARIA.—The current *Kew Bulletin* contains several documents describing a terrible pest which has attacked the Bavarian pine forests. It is known as the *Nonnen*, and is caused by the caterpillar of the moth *Liparis monacha*, which has regularly attacked forests on the Continent for the last 200 years or more. The pest appears at long intervals, but each appearance has been calamitous. In Bavaria alone the loss in State forest revenue next year is estimated at £40,000. According to the report of Mr. Victor Drummond, the Minister at Munich, the Winter frosts alone can now rid the forests of the caterpillars, and then it is feared that the bark beetle will follow and attack the diseased wood. Cuckoos, swallows and other birds, as well as wasps and other insects, have helped to get rid of the "nuns;" torches and bonfires have also been used with success; and the electric light, with a specially constructed exhauster, has been used with some success. Munich has been invaded by the "nuns" in immense numbers, and in some places the people were obliged to retreat before them. The Bavarian Forest Administration fears that no measures of destruction are of any avail. "We stand powerless before the immensity of the pest." It attacks by preference the pine and fir, but, failing these, it does not despise the beech, oak, and other forest trees; but it never attacks corn or wheat, and will never touch the horse chestnut. The only efficient general measure seems to be cutting down the whole forest infected, which makes the remedy worse than the disease. The electric light already referred to works by attracting the insects in swarms to the mouth of a large funnel, through which a rapid exhaust current of air is forced, sucking the insects into a hole under the ground, where they are buried. From a list of the various appearances of the pest, it seems that the first was in 1449. In 1853 an attack was made on East Prussia, but a storm drove the moths into the sea, whence they were thrown up by the waves in a huge bank, 30 German miles long, 7 feet wide, and 6 inches thick.

A Dragonfly with an Abnormal Wing.—A female of *Libellula pulchella* Drury, which I have lately examined, has the left front wing imperfectly developed. This wing is but three-fifths of the length of the right front wing (which is normal). The shortening has taken place throughout the entire length of the wing, but chiefly in the space between the nodus and the pterostigma. The median sector separates from the principal sector at about the usual place—half way between the triangle and the nodus—but it is very short, as it curves and joins the subnodal sector at about the same distance from the origin of the subnodal, as that between the origin of the subnodal and the point of separation of the median and principal sectors. The subnodal sector has its origin and position much as normal, but under the pterostigma it bifurcates. The short sector is bifurcated near its extremity, but is otherwise normal. The nodal sector is absent, unless it be represented by a short curved vein in the costal space between the nodus and the pterostigma, extending from the nodus to the median nervule. The discoidal areolets are entirely irregular. The two sectors of the triangle are broken and very irregular. The pterostigma is a little broader than normal, the apical spot is not as large; the nodal spot is represented by a streak with the same oblique trend as the normal spot.

The measurements of this wing as compared with the right front wing are as follows: in all cases the first figure is that of the (normal) right wing. Length 39.5 mm., 24 mm.; greatest breadth 8.5 mm., 8 mm. Length of pterostigma 5 mm., 5 mm. Distance from base to nodus 20, mm., 14 mm. Distance from nodus to inner side of pterostigma 12 mm., 3 mm. Antecubitals 17, 9. Postcubitals 12, 2 (the second very short, running from the short curved vein = nodal sector?, see *ante*, to the costa). Discoidal triangle long and narrow, with 3 cross-veins; shorter and broader, with 1 cross-vein. Internal triangle 6 cells, 2 cells. Hypertrigonals 2, 0. Basal streak extends to level of 8th antecubital, about 11 mm.; to level of half way between 4th and 5th antecubitals, about 8 mm.

The relative positions of the unmentioned veins are as nearly normal as the shortness of the wing will allow. Both hind wings and the rest of the body are normal.

This female (an adult) was taken in the upper part of the city of Philadelphia, in 1890, by Mr. Charles Yung, who presented it to Mr. Charles W. Johnson of the Wagner Institute. To the kindness of Mr. Johnson I am indebted for the opportunity of examining and describing it.

PHILIP P. CALVERT.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Twelve names, if possible, will appear in each issue of NEWS, according to number. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

GEORGE MILLER.—2, *Cacœcia fervidana;* 5, *Therina seminudaria;* 7, *Thelcteria pupula;* 9, *Mesographe stramentalis;* 12, *Pamphila campestris.*

F. H. HILLMAN.—1, *Polyphylla decemlineata;* 2, *Aphodius granarius;* 3, *Cotalpa granicollis;* 4, *Cremastochilus pilosicollis;* 5, *Silpha ramosa;* 6, *Silpha lapponica;* 7, *Dermestes marmoratus;* 8, *Hippodamia americana;* 9, *Hippodamia Lecontei;* 10, *Hippodamia spuria;* 11, *Coccinella transversoguttata;* 12, *Hippodamia convergens.*

G. D. BRADFORD —1, *Galeruca decora?;* 2, *Dibolia borealis;* 3, *Gastroidea cyanea;* 4, *Amara impuncticollis;* 5, *Melanotus communis;* 6, *Platynus placidus;* 7, *Platydema ruficorne;* 8, *Oedionychis vians;* 9, *Agonoderus pallipes;* 10, *Byturus unicolor*, var.; 11, *Telephorus carolinus;* 12, *Platydema americanum.*

# Entomological Literature.

THE ENTOMOLOGIST, December, 1890.—Editorial notes on Rhopalocera of West Norfolk, by A. Smith. Collecting in Wales, by J. Arkle. A preliminary list of the insect fauna of Middlesex, by T. D. A. Cockerell. Contributions to the chemistry of insect colors, by F. H. Perry Coste. Lists of insects taken in the Faroe and Westmann Isles, and in Iceland, by Dr. F. A. Walker. Entomological notes, captures, etc. Doings of Societies.

THE ANNALS AND MAGAZINE OF NATURAL HISTORY, December, 1890. On new Longicorn Coleoptera from Madagascar, by C. J. Gahan. Descriptions of new genera of Pyralidæ, by W. Warren. *Aspidiotus bicarinatus*, a lepidopterous larva, by E. E. Green.

THE JOURNAL OF THE BOMBAY NATURAL HISTORY SOCIETY, vol. v, No. 3.—On new and little-known butterflies from the Indian region. with descriptions of three new genera of Hesperidæ, by Lionel De Nicéville (with two plates). On new and little-known Hymenoptera from India, Burma and Ceylon, by Major C. T. Bingham (with two plates). Notes on the larvæ and pupæ of some of the butterflies of the Bombay Presidency, by J. H. Davidson and E. H. Aitken (three plates). Butterflies of the Central Provinces, by J. A. Betham, pt. 3. List of Chin-Lushai butterflies, by Lionel De Nicéville. The protective coloring of chrysalids, by A. W. Morris.

THE CANADIAN RECORD OF SCIENCE, vol. iv, No. 4.—A new Canadian *Platynus-P. hornii*, by T. Hansen, fig. on p. 236.

MATHEMATISCHE UND NATURWISSENSCHAFTLICHE BERICHTE AUS UNGARN, vii (June, 1888–October, 1889), 1890.—A. Mocsary prints (in German) the introduction to his Monographia Chrysididarum Orbis Terrarum Universi.

L'AUXILIAIRE (Amiens), October, 1890.—The wax of the cochineal insect, by E. André.

COMPTE-RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Nov. 8, 1890. —Three unpublished Psychids from southeastern Africa,* by F. J. M. Heylaerts. *Megalodon Blanchardi*,* n. sp., by C. Brongniart. Description of a new species of Elaterid of the genus *Chalcolepidius*, by E. Candeze; *C. pistorius*, Honduras. Description of a new species of Elaterid of the genus *Adiaphorus* (Candeze),* by G. Dumont. Note on the Hydrocanthares of Chota-Nagpore,* by G. Severin. Diagnoses of some new Coleoptera from the Congo,* by A. Duvivier; *Bangalaia*, n. gen. of Prosopoceridæ.

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* Contains new species other than North American.

Deutsche Entomologische Zeitschrift, 1890, heft 2.—Some new Coccinellidæ,* by J. Weise; *Niteta* n. gen. Tenthredinidæ of Europe, by F. W. Konow; an analytical table of genera and a catalogue of species; *Amauronematus*, *Holcocneme*, *Pachynematus*, *Lygæonematus*, *Micronematus*, *Eriocampoides*, *Scolioneura*, *Loderus*, *Encarsioneura*, n. gen. Description of new Snout Beetles from China,* and The habitat of the genus *Endaliscus* Kirsch, and a new representative thereof,* by J. Faust. On the varieties of some species of Goliathidæ, by Dr. G. Kraatz. New species of *Glycyphana*,* by Dr. K. Flach. *Cirrhospila* and *Melinospila*, two new genera of Macronotidæ (Cetonidæ), by Dr. G. Kraatz; 1 plate. On the genus *Granida* Motsch., id. On varieties of *Cicindela* [several species]; id. On species of *Meloe*,* by K. Escherich. Analytical review of the known species of *Lethrus*.* by E. Reitter. List of the Wasp Guests collected by Dr. A. Forel in South Tunis and East Algeria,* by E. Wasmann. New Myrmecophilous Staphylinæ from Brazil,* by E. Wasmann; figs.; *Ecitophila*, *Mesotrochus* n. gen. Snout Beetles from the Mediterranean countries,* by J. Faust.. Mylabridæ or Bruchidæ, additional notes,* by F. Baudi. *Malthodes Liegeli*,* n. sp., by J. Weise. Two new North African genera of Melolonthidæ, by Dr. G. Kraatz; *Microphylla*, *Sphodroxia*, n. gen. Thirteenth contribution to the Coleopterous Fauna of Turkestan,* by Dr. L. von Heyden, E. Reitter and J. Weise. Contribution to the Coleopterous Fauna of Amasia and Samsoun in northern Asia Minor, by Dr. L. von Heyden and E. Reitter. Revision of the species of the Palæarctic Fauna of the Coleopterous genus *Hoplia Ill.*,* by E. Reitter. New Coleoptera from Europe, the bordering countries and Siberia, with remarks on known species,* eleventh part, by E. Reitter. On varieties of *Pachnoda* (two species) and *Brachagenius*, new genus of Trichiadæ,* by Dr. G. Kraatz; figures.

Verhandlungen des Naturhistorisches Vereins der Preussichen Rheinlande, Westfalens und des Reg. Bezirks Osnabruck, 5th series, vii, 1st half, 1890.—The Coleopterous Fauna of Soest, by C. Verhoeff. The Gall-flies and Galls of Siegerland,* by E. H. Rübsaamen; with two plates.

1. Bidrag til Kundskaben om Norges Hemipterog Orthopter-Fauna. 2. Supplement til H. Siebke's Enumeratio Insectorum Norvegicorum, Fasc. iv (Diptera), Christiana, 1889. Both by W. M. Schoyen.

Nova Acta der Ksl. Leop.-Carol. Deutschen Akademie der Naturforscher, liv, No. 4, 5. Halle, 1890.—Systema Geometrarum zonæ temperatioris septentrionalis, by C. F. von Gumppenberg, Parts 3 and 4; *Cartographa*, *Limonophila*, *Epicaste*, new genera.

Entomologische Nachrichten, xvi, No. 22, November, 1890.—Synopsis of the species of the coleopterous genus *Acmæodera* Eschsch.

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* Contains new species other than North American.

known to me from Europe and the neighboring countries,* E. Reitter. For preparing Hymenoptera, by Dr. H. von Jhering. Ichneumonid studies,* by Dr. Kriechbaumer, *Ischnidium*, n. gen. for *Ischnogaster* preoccupied.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, li, No. 1.—On the Halteres of Diptera, by E. Weinland. A paper of 112 pages, illustrated by five plates and two woodcuts.

ARCHIV FUR NATURGESCHICHTE, lvi, 1 Bd., No. 3.—The claw joint on the Insect Foot: A contribution to the knowledge of its structure and function, by A. Ockler; two plates.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE 3e Annee, No. 3.—Notes on the Acarocecidæ,* by Dr. H. Fockeu.

IL NATURALISTA SICILIANO, ix, No. 11.—Some remarks on the work of Prof. B. Grassi and Dr. G. Rovelli. "Il sistema dei Tisanuri" [Thysanura,] by Dr. J. T. Oudemans. No. 12. Lepidopterological notes (continued), by E. Ragusa; on Sicilian species.

SITZUNGSBERICHTE DER KONIGL. BOHMISCHEN GESELLSCHAFT DER WISSENSCHAFTEN. MATHEMATISCH-NATURWISSENSCHAFTLICHE CLASSF, 1890, I.—Preliminary list of the Bohemian Trichoptera, by F. Klapalek.

ENTOMOLOGISCHE NACHRICHTEN, xvi, No. 23.—List of Locustodeæ of the families Phaneropteridæ, Mekonemidæ and Gryllakridæ, collected by Dr. Paul Preuss at Barombi Station, German West Africa, in 1890,* by Dr. F. Karsch; *Dithela*, *Drepanophyllum*, *Caloptropteryx*, *Preussia*, new genera.

COMPTE-RENDU. L'ACADEMIE DES SCIENCES, Dec. 8, 1890.—Note on a new genus of jumping *Acarina* from the coast of the Channel, by MM. Topsent and Dr. Trouessart; *Nanorchestes amphibius*, gen. and sp. new.

TIJDSCHRIFT VOOR ENTOMOLOGIE, xxxiii, Deel, 1 and 2. Aflevering. [The Hague,] 1890. The Macrolepidoptera of Breda and its environs, supplementary list No. 9, by F. J. M. Heylærts. Tabular review of the Bembidioni taken in the Netherlands, by Dr. E. Everts. *Papilio van de Polli* nov. sp.,* by P. C. T. Snellen. Comparative studies on Wasp Guests and Termite Guests, by E. Wasmann, one plate. *Euplœa Gelderii* nov. spec.,* by P. C. T. Snellen. System-Schema of the Pselaphidæ, by Dr. L. W. Schaufuss; an analytical table of the family with descriptions of new fossil genera and species from the Baltic amber; four plates illustrate both living and fossil species. On two native and three Javan species of the genus *Hypenodes* Guen.,* by P. C. T. Snellen; one plate. Proceedings, etc.

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* Contains new species other than North American.

ENTOMOLOGISCHE NACHRICHTEN, xvi, No. 24, December, 1890.—List of the Locustodeæ of the families Phaneropteridæ, Mekonemidæ and Gryllakridæ, collected by Dr. Paul Preuss at Barombi in German West Africa in 1890 (concluded), by Dr. F. Karsch. On Gomphidæ,* ibid.; *Neurogomphus*, *Podogomphus*, n. gen. Additions to the Hymenoptera described in No. 21,* by C. Verhoeff. Notes. Literature. As if in confirmation of certain remarks of the reviewer in the January number (pp. 17, 18), Dr. Karsch says, in a foot-note to his article on the Gomphidæ, "Since not names alone, but only clear ideas advance science, I here follow the well-weighed works of the monographer Selys and not Kirby, whose Synonymic Catalogue of the Neuroptera Odonata has already suffered an unfavorable criticism from Selys. . . . . The use of a generic name *Aeshna* F. (for *Gomphus* Leach) alongside of *Aeschna* Illig. should hardly find observance."

REVUE D'ENTOMOLOGIE (Caen), ix, No. 10, October, 1890.—Habits and metamorphoses of insects (concluded), by Capt. Xambeu (Coleoptera). To the knowledge of the Nabidæ,* by O. M. Reuter; *Hoplistoscelis* (for *N. sericans* Reut. and other species from N. America, etc.), *Halorabis*, *Lasiomerus*, *Acanthonabis*, *Stenonabis*, new subgen. Necrology—E. T. Atkinson, E. Bergroth. Materials for the myrmecological fauna of Sierra Leone (West Africa),* by Ernest André; *Psalidomyrmex*, n. gen.

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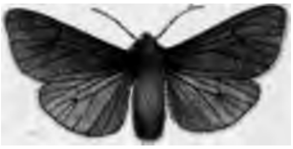
* Contains new species other than North American.

## OBITUARY.

OWEN S. WILSON died at Cwmffrwd, Carmarthen, on August 25th last. He was the author of a work on the Larvæ of British Lepidoptera, 367 pp., 40 colored plates; published in 1880.

E. T. ATKINSON, Accountant General of Bengal, and President of the Board of Trustees of the Indian Museum, died at Calcutta, September 15th. His entomological writings are important and well known, one of the latest being a Catalogue of the Capsidæ of the World.

ENTOMOLOGICAL NEWS for December was mailed December 1, 1890.
" " for January was mailed January 3, 1891.



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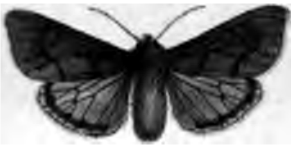

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EDWIN SHEPPARD. DEL. ET LITH. THE CENTURY LITH. C

Fig. 1. PHRAGMATOBIA ASSIMILANS.-WALKER.
Fig. 2. PHRAGMATOBIA VAR. FRANCONIA.-SLOSSON.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY NATURAL SCIENCES, PHILADELPHIA.

VOL. II. MARCH, 1891. No. 3.

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## Phragmatobia assimilans n. var. franconia, Pl. III, fig. 2.

BY ANNIE TRUMBULL SLOSSON.

(See Vol. II, No. 1, p. 2.)

Red. Abdomen conical, short and stout, with darker dorsal and lateral lines; pilose. Thorax darker and still more pilose. Primaries rather thinly clothed with scales, the ground color red, thickly sprinkled with dark brown, but with color of under ground showing through, so as to make the general tint a reddish chocolate; two discal dots connected by line, and two diffuse transverse lines, all of leaden black. The anterior line is arcuate, the posterior runs obliquely to median vein, then curves and takes a sinuously oblique course to inner margin. Secondaries pale red with two small discal dots, and a submarginal band somewhat irregular and interrupted, of leaden black. Antennæ simple, whitish. Underside of primaries and secondaries an almost even tint of bright red; the submarginal band on secondaries and discal dots of both sets of wings showing through faintly.

Described from one female, taken at light, May 24, 1890, at Franconia, N. H.

# On three species of Hymenoptera from East Africa.

BY WILLIAM J. FOX.

The three species of Hymenoptera mentioned herein represent a portion of a small collection of insects collected by Dr. Wm. L. Abbott, on Mt. Kilima Njaro, E. Africa, at an elevation of 4000 feet, and presented by him to the American Entomological Society.

**Sphex Abbotti** n. sp.—♀. Black; head and thorax clothed with long black pubescence, which is short and rather bristly on the dorsulum, and intermingled with griseous on cheeks and sides of the thorax; clypeus feebly and sparsely punctured, with a shallow depression centrally, before the anterior margin with a strong transverse impression, the anterior margin, medially incurved, with a slight tooth or process on each side of the incurvation of inner eye; margin not altogether parallel as they begin to converge at a point opposite the ocelli; labrum acutely carinated on its anterior portion, the carina projecting sharply over its margin; a distinct impression extends from lower ocellus to between the base of antennæ; the ocelli placed in a V-shaped furrow; thorax on the sides shining, finely punctured, the dorsulum very finely rugose; scutellum with a strong medial impression; metathorax above coriaceous, impunctate, with a distinct longitudinal furrow, which is broader and deeper at apex, on the sides the metathorax is finely punctured; stigma furrow curved, foveolate; wings brownish black, with a strong violaceous reflection, first recurrent nervure received by the second submarginal cell before its apex, the second being received by the third submarginal cell between its base and middle, and is strongly bent towards the apex of the wing, third submarginal cell much narrower above than beneath; the anterior tarsi with a row of long spines posteriorly, the first joint with three spines in the middle of its anterior margin; abdomen shining, the venter with a few long black hairs. Length 30 mm.

One specimen.

**Belonogaster rufipennis** De Geer.

One specimen.

**Xylocopa nigrita?** Fab.

One specimen, which agrees tolerably well with the short diagnosis given by Smith (Tr. Ent. Soc. Lond., 1874, p. 261), but it has the anterior and posterior femora entirely black, and is 12 mm. longer. Not having specimens of *nigrita*, I am in some doubt as to the identity of this specimen. The length is 40 mm.

# Observations on the butterfly, Paphia troglodita.

BY PROF. R. R. ROWLEY.

I have studied this species through the last six or seven summers, in the field, on its food-plant and in my rearing jars, and am quite well acquainted with its habits. Perhaps some of my observations will be of interest to the readers of ENTOMOLOGICAL NEWS.

The imago is one of our hardiest butterflies, appearing early in the Spring and lingering late in the Autumn. I have seen it on pleasant days in late March and early April at sunny spots in the woods darting from the trees to the dry leaves that cover the ground, and away again at the slightest noise. At that season it also frequents sunny south hillsides, and is always very active, being at all times a difficult butterfly to take in the net.

The last brood of imagos appears in early October and often flies till November, appearing in the Spring as a very ragged and anything but handsome insect.

As its food-plant, *Croton capitatum*, is an annual, slow to germinate, and tardy in its growth, the eggs for the first brood are not laid till May. It hardly seems possible that these torn and faded butterflies of March should linger till May to fulfil the mission of nature, but they are fitted by that same nature to survive the frosts of Winter, and why should they not adapt themselves to their surroundings and accommodate themselves to circumstances?

The eggs hatch in from four to six days. They are round, apparently smooth, and, when first laid, of a pale sky-blue, almost transparent appearance, growing yellowish and opaque in two or three days.

There are, perhaps, three broods of butterflies in a season, but this is a hard question to determine, as there is a constant intermingling of the broods, the same plant often supporting eggs, freshly hatched larvæ, half grown and full grown caterpillars at the same time.

Although *Croton capitatum* is an abundant plant here, the ♀ *Troglodita* seems to be rather choice of a place for her eggs and out of a cluster of weeds will select one or two to the neglect of the others, even depositing as many as four or five and often two eggs on the underside of one leaf.

Again, in neglected fields or pastures, you may wade through thousands of crowded plants with rarely a sight of a larva, or examine closely the great patches of *Croton* in the woods with little reward for your trouble.

It is by the roadside, in the cultivated fields, or along the sandy or gravelly beds of streams that the plants seem especially inviting to the females, and thrifty isolated weeds are often completely defoliated by the larvæ in late Summer.

Where the larvæ are abundant an occasional pupa is found suspended beneath a shelter made by fastening two or three leaves together by their edges with an underlining of silk, but search among neighboring stones and chunks fails to disclose chrysalids, a fact that sets one to wondering if the larvæ ever leaves its food-plant to suspend for pupation. I have never seen a larva on the ground, yet they must sometimes travel from plant to plant, as a few caterpillars soon defoliate a young *Croton* plant, and such leafless weeds are often seen without even a place for the suspension of a pupa.

In the rearing jars more than half of the larvæ, just prior to suspension, manifest no more activity than they have during their sluggish larva-hood, but commence at once to construct a shelter, while a much smaller number spin ladders of silk up the glass sides and suspend from the underside of the cover at the top.

The young larva, as soon as it begins to eat, commences the construction of a perch much as the larva of *Limenitis* is known to make, by using waste bits of leaf and excrement, fastened and stiffened with silk. This perch is usually at the apex of the leaf, but once I found two perches on the same leaf, and one was lateral. The little caterpillar rests on this perch when not feeding, and it serves, undoubtedly, for protection to the delicate creature against its keen-eyed enemies whatever they may be.

At the second molt the larva has developed a new building instinct. After selecting a suitable leaf it draws the edges together, securing them with silk, and takes refuge in this retreat. In feeding, the larva usually crawls out upon the stem to an adjoining leaf, but quite often, in its sluggishness, it attacks the base of its shelter, literally devouring its own home.

A young caterpillar seems to have no idea of the fitness of things, and constructs an abode large enough for a full grown "worm," secreting itself in the smaller end of its house, which.

upon a hasty examination, might be mistaken for an abandoned retreat of a mature larva.

The larva is a dirty white or soiled green color, of a granular appearance, with a large head, the body tapering slightly backward. Before suspension it has become a watery green, and after attaching itself to the silk button, it rests in a circular or loop-like position, the head bent forward till it quite reaches the button.

The pupa is usually of a beautiful green color, but sometimes is speckled with brown, and occasionally of a brown tint altogether, while rarely it is almost black. The abbreviated abdomen, the green color and appearance of the pupa in suspension reminds the observer of the pupa of *Archippus*, but the resemblance is not striking.

The pupal period is seven or eight days. For twelve hours before giving the imago the color and markings of the wings in miniature, beneath the pupal sheath, may be distinctly seen, and it is as easy to distinguish the females from the males by the wing band as it is among the imagos.

The fresh imagos will hang in the cage for some time unless crowded, without fluttering, and often when taken between the thumb and finger after having been out four or five hours they will fain death, sometimes dropping to the bottom of the cage when an attempt is being made to remove them. This is oftener the case, however, when they are fresh from the pupa and with no strength of wing. I have noticed the same thing in *Vanessa antiopa*, and perhaps this "'possum policy" is common to many diurnals.

The male imagos differ little in color or markings, being a uniform reddish brown with a darker border to the wings. An occasional ♂, however, displays a faint cross band on the forward wings, or, more properly, the broken boundary lines of a band-like field, and the same more rarely on the hind wings.

The females differ much in color and the appearance of the band. The underwings of the ♀ vary from a reddish brown to a yellowish brown.

The females of the earlier broods have nearly a uniform color over the entire wings, the band being merely outlined by bounding lines, or if the band differ in color from the rest of the wing it is not a noticeable difference. Moreover, the ground color of these earlier females is a brownish red, but paler than in the males.

The females of the later broods are usually lighter in color, and in most cases with more pronounced bands on the wings.

The band is sometimes almost yellow in contrast with a brownish red wing, making a very attractive cabinet specimen.

Often the hind wings are a shade lighter in color than the forward ones, and occasionally there is a row of yellow points or small spots beyond the band on this wing, and very rarely so on the front wing. The more distinct band distinguishes the later from the earlier female.

This butterfly may be seen by the roadside, near its food-plant, in sunny places, or about streams of water. The ♀ is rarely met with away from *Croton*, while the ♂ wanders broadly. At some damp place he may be found sipping, but it takes a clever hand to capture him. At the slightest jar he darts into the neighboring tree tops with the rapidity of an arrow, and it takes a quick eye even to follow him. He may come back, but his coming is as sudden as his going, and before you have collected yourself for a forward movement he is off again, and he rarely settles in the same place twice. With his wings folded, he defies detection among the brown leaves or stones, and you must flush him before you take him, and once flushed nothing but skillful manœuvreing can outwit him.

The larva of *Paphia troglodita* feeds on both *Croton capitatum* and *C. monanthogynum*, both of which grow here, often together. The former, however, seems to be the preferred food-plant. In one plant last August I counted twenty-five larvæ of all sizes, from those just hatched to those full grown. On another plant sixteen.

## ELEMENTARY ENTOMOLOGY.

Ninth Paper.—CLASSIFICATION OF INSECTS.

The number of kinds of insects is very great, so that no one can hope to study minutely the structure, habits and transformations of but very few of them. But enough can easily be learned about the various kinds in a general way, to know that the whole great group of insects can be successively subdivided into smaller and smaller groups.

What we may call the unit in this subdivision or *classification*, is the *species*.* By a species of plants, animals, or insects, we mean a group of individual plants, animals, or insects (1) alike in appearance and (2) capable of producing fertile offspring among themselves.† The first part (1) of this definition is *morphological*, that is, it has to do with form, structure, etc.; the second part (2) is *physiological*, or has to do with functions or actions.

The morphological part of the definition, "alike in appearance," admits of variations. It is well known that of very many animals and plants there are *varieties*, differing more or less in appearance, and that individuals of two different varieties, interbreeding, will produce fertile offspring. For this reason we must consider these two varieties to belong to one and the same species. On the other hand, two animals or plants, differing more or less in appearance, which will not produce fertile offspring between each other, must be considered to belong to different species.

Practically, in the study of insects, we can very rarely apply the second or physiological part of our definition. We must, therefore, rely to a very great extent on the morphological part. If we meet with two insects differing in structure, form, color, etc., or any or all of these characteristics, we must consider them as of different species, either until we learn of other insects intermediate between these two, and which "quite bridge over the difference previously supposed to exist" between them, or until we learn that these two insects, interbreeding, will produce fertile offspring. But in applying these principles in our study, we must be cautious about two things: in affirming the existence of "new," that is, undescribed species, based on the existence of single, more or less doubtful specimens; —— and in regarding as of different species, the two dissimilar sexes of one and the same species.

But after having attempted thus much in explanation of what a species is, it cannot be too strongly insisted that *no hard and fast lines exist in nature to separate species*. Indeed, the designation of certain groups as "species," "genera," "orders," etc., is rather for purposes of convenience than as statements of absolute differences.

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* Experience has shown that it is well to point out that the singular and the plural o this word are spelled alike—*species*.

† In the preparation of this paper the writer is partly indebted to Prof. St. George Mivart's work on "The Cat," chap. xii. 1881.

Groups of species form *genera*. A genus cannot be easily defined, even in the imperfect way in which we have defined a species. All the species belonging to the same genus possess certain structural characters in common.

Groups of genera form *families;* groups of families form *orders;* groups of orders form *classes*. Two classes differ from each other by characters more widely different than those which divide two orders, and so on down the scale. Intermediate groups, such as *subclasses*, between classes and orders; *suborders*, between orders and families; *subfamilies*, between families and genera; and *subgenera*, between genera and species, are also employed in classification. A *tribe* is a division sometimes placed between a family and a subfamily; sometimes between a family and an order.

The scientific nomenclature employed for insects (as for all animals and plants) is to give to each species two names of either Greek or Latin form. Thus, the name of the Honey Bee is *Apis mellifica*. The first name is *generic*, the second *specific*. A familiar comparison is that which likens the generic name to a person's surname, the specific name to his individual, or Christian name. This binomial nomenclature is dated from the time of Carl von Linné (Linnaeus, b. 1707, d. 1778), the great Swedish systematist. Linné's genera, in very many cases, correspond to our present families, or even suborders. The constant discovery of species unknown to Linné, rendered his genera large and unwieldy, and revealed characters for the subdivision of his genera into smaller genera. The abbreviated name of the author who first proposed the name of the insect in question, usually follo the specific name. Although usage in this respect varies, it i best that the author's name should be that of him who first ga the specific name, regardless of the genus in which he placed

It has frequently happened that the same species of insect h received several specific names from different authors, due to suc causes as the insufficiency of previous descriptions, describin two dissimilar sexes of the same species as different species, ignorance of the existence of previous descriptions, insufficienc of the characters given as separating two species at one tim presumed to be distinct, etc. In such cases *the* name of the spe cies is to be the one first given to it, or in some fewer cases, that one which has been most commonly used. The other names are *synonyms*. To determine the correct name of a species and its synonymy is very frequently a most difficult task, and in some cases can only be decided by a comparison of the types of the descriptions concerned.

Family names are usually formed from the name of the principal genus with the termination *idæ* added. To a less extent subfamily names end in *inæ*, also formed from generic names.

The *type* of a genus is that species which best represents the characters of that genus; the *typical* genus or family, is the most representative genus or family of the larger group to which it belongs. The *type* or *types* of a species are the individual specimens from which the species was described. P. P. C.

———o———

## COMPOSIA FIDELISSIMA *versus* C. OLYMPIA.

BY HARRISON G. DYAR.

On opening the December number of ENTOMOLOGICAL NEWS I was pleased to see Prof. French's excellent figure of *Composia olympia* Butl., but I wish to state that it does not differ in any particular from my examples of *C. fidelissima* H. S., and that there is only one species of *Composia* now known from Florida.

The question resolves itself into one of the correct determination of the species, and I append Herrich-Schaeffer's description: that of Mr. Butler I have not been able to see. Further than this I have seen in the American Museum of Natural History, by the kindness of Mr. Beutenmüller, two specimens of this species, which, I am informed, are the ones that were before Mr. Grote at the time of his writing on the Zygænidæ of Cuba,* where they are referred to as *fidelissima*. It is possible that Mr. Butler has redescribed this species under the name *olympia*, but this point I am not now in a position to decide.

**Composia fidelissima** Her.-Sch.

1866—Her.-Sch., Cor. Bl. Reg. No. 9, p. 132.
1867—Grote, Proc. Ent. Soc. Phil. vi, 303.

". . . . Nigra, cyaneonitida, punctis acpitis, thoracis et baseos alarum anter. niveis; maculis niveis ante limbum alarum omnium, præterea seriebus duabus costalibus anteriorum, maculisque tribus purpureis versus basin costæ."

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* Proc. Ent. Soc. Phil.

Unless there are two closely-allied species of *Composia* in Cuba the above description applies well to the present form, except that the underside is not described.

Note on the habit of Composia fidelissima H.-S.—Examples of this species were taken by me on the east shore of Lake Worth, Florida, as already noted in these pages, and they exhibited a means of defence which I have not observed in any other moth. When captured, so that it was unable to fly, the insect, by expanding and contracting its abdomen, forced a column of yellowish froth out of the centre of its thorax above. The froth was of about the consistency of soap-suds, and the little bubbles, of which it was composed, "went out" after a time leaving a yellow stain. All that were taken, including individuals of both sexes, behaved in this manner, with the exception of two, in one of which the froth exuded from a point in the underside of the abdomen, and in the other from the end of a broken vein of one hind wing. It would appear as if this froth was formed from the blood of the insect, which was forced out by the pressure of contracting the abdomen from the point of least resistance, usually the centre of the thorax, where there is probably a small aperture.

Harrison G. Dyar.

# A CONTRIBUTION TO THE ODONATA OF MAINE.

Specimens in the Maine State College Collection, or taken near Orono, Penobscot County, Me., in 1890.

BY F. L. HARVEY.

## Tribe I.—AGRIONINA.

### Subfamily 1.—Calopterygina.

1. *Calopteryx maculata* Beauvois.—Common over running water. Chemo Stream, Bradley, July. Several pairs taken mating. The female usually, when followed by the male, comes to rest on the alder bushes. The male flies over her and seizes her by the neck; she then turns her abdomen under to the second segment of the male.

2. *Calopteryx æquabilis* Say.—Scarce; only one pair taken July. Flying over water with the above.

### Subfamily 2.—AGRIONINA.

3. *Argia violacea* Hagen.—Chemo Stream, July 15th; Otter Creek, August 30th; over bogs and ponds. Common.

4. *Argia putrida* Hagen.—August 8th; over dry road. Rather common.

5. *Argia apicalis* Say.—August 8th; over dry road with above. A single ♀.

6. *Ischnura verticalis* Say.—Chemo bog, July; Frog Pond, Orono, September 3d; several pairs mating. This species had the habit of lighting on the surface of confervæ, and flying so close to the water they were hard to take with a net.

♀ orange form.* Not rare over Chemo bog. July.

(To be continued.)

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

**☞ See change of wording in notice of Identification of Insects.**

FROM A FORMER SUBSCRIBER.—I have no intention of taking the NEWS another year. It is too advanced for me; it shoots over my head and seldom hits me.

QUERY.—Has any entomologist noticed the effect of thunder storms upon larva? It has been a source of considerable thought to me that this may be one of the causes of the scarcity of certain common species of our fauna. I base the idea on the following experience: sometime ago I received a quill of *Saturnia perneyi* eggs, which in due time produced larva, but very early, and I had quite a task to discover the food-plant. I had received information with the eggs "that they fed on oak." I tried all the oaks I could think of, and nearly lost all my larva; at last I tried

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* Following my identifications of Miss Wadsworth's Odonata, Prof. Harvey had referred the orange females to *Ramburii* Selys. I am now satisfied that the specimens quoted in Miss Wadsworth's list as "*I. Ramburii* female orange var." (ENT. NEWS, I, p. 36, No. 4) are really the orange females of *verticalis*. With Prof. Harvey's permission I have made a similar change in his MS. The orange females of *verticalis* have a narrow humeral black stripe on each side of the dorsum of the thorax, and the 1st, 2d and basal part of the 3d abdominal segment are orange on the dorsum. The orange females of *Ramburii* have no humeral thoracic stripe, and the orange at the base of the abdominal dorsum is confined to the first and the base of the second segment.—PHILIP P. CALVERT.

*Pin Oak*, which they fed on readily, and I succeeded in getting several imagos. From a pair of these I started the second brood, now knowing the food-plant I lost none by starvation. During the latter part of July I had 133 larva between the second and third moults; my breeding-box was covered with wire, such as is used for window-screens, etc., and was placed near an open window, on the second floor, facing West. During the afternoon a terrific thunder storm raged, the lightning vivid and close. During the storm I went to close the window when I found a number of the larva hanging limp and dead over the boughs of the food. After the storm I took from the cage 71 dead larva. The rest appeared all right, but somewhat sluggish for a day or so; during the early part of August, and between the third and fourth moult, we had a similar storm, with the same effect on the larva, for, on the next day, I found all dead but 13, which I succeeded in raising to imagines. Two years ago I was raising a brood of *Telea polyphemus*, which you notice is closely allied to the former, when the same phenomena took place, and I lost nearly all the brood. Was it the electricity, the heavy thunder claps, or natural causes? Has any entomologist had similar experience with other species?

JAMES S. JOHNSON.

THE larvæ of the *Papilio anchisiades* live on the lime or orange trees, which they do a good deal of harm to. When young they are of a dirty yellowish red color, glossy and quasi-transparent; when full grown they are about two inches long, of a dark brown color with irregular markings of cream color. I captured a group of ten on the 18th of July, 1889, on the leaves of a lime tree, the branch having over 100 leaves. I cut this branch from the trunk of the tree, placed it in my breeding cages at six P.M.; revisited it on the next day and found only the bare stalks of the branch, all of the leaves having been consumed. The larvæ feed at night, and in the day are seen grouped together in various numbers one over the other; when disturbed, like all caterpillars of the genus *Papilio*, they emit two horns from the ring immediately preceding the head, which is the thoracic portion of the future adult, giving off at the same time a most infectious smell. I always thought that this smell emanated from the protrusion of the horns, but I noticed that at that moment of throwing them off, they discharged a greenish liquid from their mouths which I ascertained to be the substance that smelled. I fed them up to the 16th of August, when they were transformed into chrysalids. In this stage they are very much, both in color and shape, like a piece of decayed wood The caterpillar before completing its transformation spends about 24 hours motionless on the spot where it is to effect the change, fixes itself tightly with a gummy substance by the anus; then provides two strings which are passed higher up, and, as soon as ready, lets go the place where it held with its legs, and the wonderful motionless, though living insect, lays there at an angle of 45 for 17 days, for on the 2d of September I contemplated the marvellous metamorphosis. There was the *Papilio anchisiades* weak and almost helpless for about three hours, but soon to be seen flitting about the lime tree.—H. CARACCIOLO, Trinidad.

VANESSA URTIOÆ.—From Oakland, Cal., I received two specimens of a year ago. They were taken in suburbs of Oakland by the children of a friend of mine in the Summer or Autumn of 1889. They arrived with a lot of diurnals containing a number of *V. californica* in the Spring of 1890, and, inasmuch as the most of those *Vanessa* were oily, I did not relax specimens until I had time to de-oil them, and when I discovered *V. urtioæ* among the lot, was puzzled to know what they were. I had no European specimens in my collection. It is fully forty years ago since I took any in my native land, and had forgotten what little I then knew of this species. I possess Emmons' "Agricult. Nat. History of New York," in which an illustration is given, which agrees perfectly with my *V. urtioæ*.

In referring to Dr. H. Strecker's "Synonymical Catalogue of Macrolepidoptera" 1878, I find under genus *Vanessa*, page 133, the following foot-note: "Emmons, in 'Agr. Nat. Hist.' N. Y., v, p. 209, t. 46 (1854), describes and figures *V. urtioæ*, stating that it occurred in New York,—*of course erroneously, as no authenticated instance of its capture in this country is known.*" Italics are mine.

My entomological literature is very limited, and I have no knowledge whether its capture in this country is reported or not. I took a specimen to the assistant of Mr. B. Neumoegen, Mr. J. Doll, and the latter confirmed that it was *V. urtioæ*, but doubted its occurrence in this country until I assured him that it was taken in California.

My friend or his children are not entomologists, and I had to instruct them by letter where and how to capture Lepidoptera, and many of those first received were anything but perfect specimens. In coloring, *V. urtioæ* are good, but devoid of antennæ. One of those children had a fondness for studying insects, and I have succeeded in keeping him, a eleven-year old boy, busy taking many nice specimens for me, inasmuch as he now understands better how to handle Lepidoptera.

RICHARD E. KUNZE, M.D.

MR. A. SIDNEY OLLIFF, late assistant in the museum, Sidney, Australia, has been appointed to the newly-instituted office of Government Entomologist in the Department of Agriculture, New South Wales. His duties will be chiefly the study of insects affecting fruits and crops, whether injurious or beneficial, and publishing reports on the results of the information of farmers and horticulturists. According to the latest news as to the new insect pest, Mr. Olliff will not lack employment.

EGG PARASITES.—From a group of eggs similar to those sent to the Academy, there escaped a number of flies kindly identified by Mr. L. O. Howard as a new species of *Hadronotus*, a proctotrupid of the subfamily Scelioninæ. The present group, apparently alike, though lighter in color, being found upon a green stem, was placed in a bottle with a little water to maintain the vegetable growth. The eggs are of a light bronze color, oval, with a network of surface markings and a crown of spines near the upper end. From them hatched an equal number of hemipterous larvæ that at first gathered upon the underside of a leaf. Desiring to learn what the mature insect was to which the *Hadronotus* had acted as an egg parasite, an attempt was made to raise these larvæ, but they evidently were not vegetable feeders, for after shedding their first skins they died one after another, never having attached themselves to the stem. Subsequently we were informed by Mr. Howard that the eggs from which the *Hadronotus* issued are those of the common *Podisus spinosus*, and that he finds that Prof. Riley has in the National Museum collection the same parasite reared from the eggs of the same species by Mr. Schwarz at Selma, Ala., in September, 1880.—EDWARD POTTS.

HABITS OF BEES.—On the north side of a depressed roadway at Wawa, Pa., for some hundreds of feet, the perpendicular bank of rotten rock through a depth of about two feet below the sod, was found to be covered with small perforations resembling shot marks. These were occupied by a small, solitary bee, identified as *Halictus confusus* Smith, that during the months of July and August, and most abundantly during the latter month, hovered along the bank, sometimes laden with pollen dust, each seeking its own proper opening. Frequently, on alighting, one would be met at the door of a hole by a janitor who stood on the watch, its cervical head just visible at the entrance. The bee never tried to force its way in, but at once sought another hole. To ascertain the depth of these excavations, we probed a large number with slender grass stems, and in many cases could only penetrate four or five inches. In others, however, a foot was reached easily, and in one instance eighteen inches. The bees were most active in the hot sunlight.—EDWARD POTTS.

A DISPLACEMENT.—*Phyllotretra vittata*, always a common species in the vicinity of Philadelphia, especially below the city, on both sides of the Delaware River, seemed to be completely displaced last season by *P. sinuata*. To the best of the writer's knowledge *P. sinuata* was previously unknown to this section, but appeared in great numbers during June and July. But a few isolated specimens of *P. vittata* were noted during the season, it being almost as unusual to find as *P. bipustulata*.—C. LIEBECK.

*Limnichus punctatus* and *Heterocerus pusillus* were taken somewhat abundantly in an abandoned iron-ore pit in Montgomery County, Pennsylvania, during June. Small pools of water at the bottom furnished the means to drench the sloping sides of the pit and washing out quite a number of each species. *H. pusillus* has not heretofore been recorded from points east of Allegheny, Pa. All the specimens of *L. punctatus*, upwards of forty in number, were taken from a space not more than three feet square. Although the pit was a large one, none were taken outside of this limited space. *H pusillus*, however, was scattered over the entire place —CHAS. LIEBECK.

THE inclosed slip is from one of our papers. To some inquirers about this bug I stated I thought it a *real lightning bug*, but some are disposed to think it a Humbug, but I objected, that such a bug was unknown in Philadelphia.—JOHN HAMILTON.

INOCULATED WITH ELECTRICITY.—Philadelphia, Dec. 30. Physicians and medical students have been studying with great interest a case without a parallel, so far as known. Little Mamie Lurker, walking on Girard Avenue a few days ago with her aunt, suddenly stopped, and, putting up her hands to her face, screamed, "I am shot." The aunt seized the child's hands, and immediately staggered back as if she had received an electric shock. A crowd speedily gathered, and a man crushed with his foot a peculiar bright-hued bug, bottle-shaped and hard-shelled, which, falling from a wire overhead, had dropped on the girl's face and stung her.

A bright crimson spot on Mamie's cheek showed where the bug had made the wound, and evidently inoculated her with the electricity with which it was charged by being in contact with the wire. Little would have been thought of the accident had it not been for the peculiar symptoms of the girl, who was nervous and uneasy, and whose grasp sent an indefinable tingling sensation to the hands of everybody who touched her.

Dr. De Beust diagnosed the case as bullia, or vascular poisoning, and administered the remedies usual in cases of that kind. To his astonishment, however, the bright-hued sore on the cheek was followed by other bright-hued eruptions on every part of the body, each one emitting the same peculiar tingling sensation when touched. In his opinion the bug was of a Brazilian species brought to this country in the year of the centennial. The insect in itself is not known to be poisonous, and is distinguished for its peculiar bottle-shaped appearance.

The patient is now considered out of danger, after unremitting attention on the part of the physician, but still suffers from the inoculated electric bite.

OUR collector (NEWS) spent a week under the electric lights before he succeeded in getting a specimen. This was sent to the Determiner who has charge of the Department of Identification of Insects; he recognized the species as *Electricia tomfooleryensis* De Bust.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Twelve names, if possible, will appear in each issue of NEWS, according to number. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

A. G. WEEKS.—1, *Junonia orithya;* 2, *Byblia ilithyia;* 3, *Ergolis ariadne;* 4, *Ixias marianne* ♀; 5, *Junonia lemonias;* 7, *Diadema misippus* ♀; 8, *Euplœa core;* 9, *Pyrrhogyra tipha;* 11, *Eunica monima;* 12, *Danais gilippus*, var. *cleophile;* 13, *Danais archippus;* 14, *Papilio aristolochiæ;* 15, *Callidryas pomona;* 16, *Callidryas pomona;* 17, *Callidryas pomona;* 18, *Callidryas pomona;* 19, *Idmais* sp. ♂; 20, *Diadema misippus* ♂; 21, *Callidryas pyranthe;* 22, *Idmais* sp. ♀; 23, *Junonia œnone*, var. *hierta;* 24, *Pieris mesentina*; 26, *Diadema misippus* ♀.

RALPH HOPLING.—1, *Bradycellus rupestris;* 2, *Cratacanthus dubius;* 3, *Platynus nutans;* 4, *Pterostichus mutus;* 5, *Harpalus viridiæneus;* 6, *Melanophila longipes;* 7, *lost;* 8, *Melanotus communis;* 9, *Elaphidion villosum;* 10, *Elaphidion parallelum;* 11, *Tenebrionellus molitor;* 12, *Tenebrionellus obscurus.*

G. D. B. Lot 2.—1, *Serica sericea;* 2, *Doryphora clivicollis;* 3, *Staphylinus cinnamopterus;* 4, *Cardiophorus convexus;* 5, *Odontota nervosa;* 6, *Paria 6-notata;* 7, *Corymbites tarsalis;* 8, *Podabrus modestus;* 9, *Pterostichus lucublandus;* 10, *Limonius griseus;* 11, *Lucidota atra;* 12, *Melanotus fissilis.*

F. H. HILLMAN.—1, *Dendroctonus terebrans;* 2, *Nemognatha apicalis;* 3, *Cyclocephala longula;* 4, *Megilla vittigera;* 5, *Aphodius nevadensis;* 6, *Lina scripta* var.; 7, *Saprinus lugens;* 8, *Coniontis obesa;* 9, *Nitidula ziczac;* 10, *Notoxus calcaratus;* 11, *Tomicus pini;* 12, *Calospasta mirabilis.*

W. M. HILL.—1, *Clinidium sculptile;* 2, *Megalodacne heros*; 3, *Brontes dubius;* 4, *Onthophagus hecate;* 5, *Stenolophus conjunctus*; 6, *Boletotherus bifurcus;* 7, *Coptocycla guttata;* 8, *Anthonomus* sp.; 9, *Atænius cognatus.*

W. C. WOOD.—1, *Apristus subsulcatus;* 2, *Amara musculus;* 3, *Amara chalcea;* 4, *Atranus pubescens;* 5, *Bembidium contractum;* 6, *Tachys xanthopus?;* 7, *Amara* sp.; 8, *Platynus punctiformis;* 10, *Platydema americanum;* 11, *Pterostichus hicublandus;* 12, *Phaleria testacea.*

D. B. YOUNG.—1, *Tetraopes tetraophthalmus;* 2, *Typocerus velutinus;* 3, *Elaphrus ruscarius;* 4, *Phellopsis obcordata;* 5, *Hister interruptus;* 6, *Chrysomela philadelphica;* 7, *Chrysomela similis;* 8, *Geotrupes Balyi;* 9, *Dicerca divaricata.*

F. C. HARVEY.—1, *Ptinus brunneus.*

## Entomological Literature.

NOTES ON THE HABITS AND EARLIER STAGES OF *Cryptophasia unipunctata*, by Henry Edwards (from the Proceedings Linnean Society of New South Wales, vol. v).

THE ENTOMOLOGIST, January, 1891.—The sexes of Lepidoptera, by W. F. de Vismes Kane. Notes on the Lepidoptera of Chiltern Hills, by A. J. Spiller. A Preliminary List of the Insect Fauna of Middlesex, by T. D. A. Cockerell. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste.—For February, 1891.—Remarks on *Meana strigilis*, *M. fasciuncula*, and a probable new species of the genus, by Richard South. The Habits and Life-history of the New Zealand glow-worm, by G. V. Hudson. A Preliminary List of the Insects of the Insect Fauna of Middlesex, by T. D. A. Cockerell. Notes on British Lepidoptera; extracted from Continental journals, by W. Warren. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste. Coleoptera from Kulu, in

N. W. India, by W. H. Bates. New species of Rhopalocera from N. W. China, by J. H. Leech. Descriptions of some new Phytophagous Coleoptera from India, by Martin Jacoby.

ENTOMOLOGIST'S MONTHLY MAGAZINE, January, 1891.—On certain British Species of *Conchylis*, by Lord Walsingham. Can *Deilephila galii* be found in the larval state every year in England? by W. H. Tugwell. *Gelechia sparsiciliella* n. sp , by C. G. Barrett. *Symmoca signatella*, H.-S., a recent addition to the British fauna, by A. F. Griffith. A Fortnight in Algeria, with descriptions of new Lepidoptera, by E. Meyrick. Occurrence at Portland of *Tenia subtilella*, a species new to the British fauna, by N. M. Richardson. On the British species of the genus *Pityophthorus*, by W. F. Blandford. On the Oviposition of *Metœcus paradoxus*, by Algernon Chapman. Note on a new *Cicindela* from North Japan, by G. Lewis. On the British species of the genus *Cicadula*, by James Edwards.

PENNSYLVANIA AND NEW JERSEY SPIDERS OF THE FAMILY LYCOSIDÆ, by Witmer Stone (Proc. Acad. Nat. Sci. 1890, p. 420). A table of the genera and species by which they may be determined is given, and the species described in full. Three new species are described: *Pirata elegans*, *P. marxi* and *Pardosa nigra.*

BIBLIOGRAPHICAL CATALOGUE of the described transformations of N. American Coleoptera, by Wm. Beutenmüller (Jour. N. Y. Microscopical Society, vol. vii, No. 1). Those interested in the subject owe thanks to Mr. Beutenmüller for a very useful work. and one that has cost him much time and labor.

LIST OF THE DIURNAL LEPIDOPTERA taken by Mr. Wm. Doherty, of Cincinnati, in Celebes, June and July, 1887, with descriptions of some apparently new forms, by Rev. W. J. Holland (Proc. Bost. Nat. Hist. Soc. 1890, pages 52 to 79).

SIXTH REPORT OF THE INJURIOUS AND OTHER INSECTS OF THE STATE OF NEW YORK, by J. A. Lintner, Ph.D., State Entomologist. This contains the usual amount of interesting subjects in economic entomology, with a very useful and complete index.

UNIVERSITY OF NEVADA AGRICULTURAL EXPERIMENT STATION, Bull. No. 8, by F. H. Hillman. The Codling moth (*Carpocapsa pomonella*), its life-history, and remedies for its extermination. Bulletin No. 9.—A Serious Rose Pest (*Lithophane antennata*). Bulletin No. 10.—Plant-lice infesting the Apple (illustrated). Bulletin No. 11.—The Pear and Cherry Slug (*Selandria cerasi*).

PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION, Bulletin No. 33, vol. ii, Lafayette, Ind.—Entomological Notes, by T. M. Webster. Experiments with the Plum Curculio. Notes on Strawberry Insects, *Tyloderma fragariæ*. The field cricket, *Haltica ignita*. Some hitherto unrecorded Enemies of Raspberries and Blackberries, *Solenopsis fugax*, *Limonus auripilus*, *Carpophilus brachypterus*, *Inlus impressus*, *Cosmopepla carnifex*.

BIOLOGIA CENTRALI-AMERICANA, Part 39, November, 1890.—Vol. iii, part 1, by G. H. Horn (pp. 193-257, pl. x); vol. iv, part 2, by G. C. Champion (pl. x); vol. iv, part 3, by D. Sharp (41-56); vol. vi, part 1, Supplement, by M. Jacoby (pp. 217-224). Hymenoptera: vol. ii, by C. Cameron (pl. 7). Lepidoptera Rhopalocera: vol. ii, by F. D. Godman and O. Salvin (plates 68, 69). Diptera: vol. ii, by F. M. Van der Wulp (pp. 201-208).

NAT. HIST. OF VICTORIA.—Prodromus of the Zoology of Victoria, Decade 20, by Fred. McCoy. Life-history of *Chelepteryx collesi* with colored figures of imago, larva, chrysalis, cocoon, etc.; also of *Pyrameis itea* and *P. kershawi*.

THE ANNALS AND MAGAZINE OF NATURAL HISTORY, vol. vii, No. 37. —Notes on Longicorn Coleoptera of the Group Cerambycinæ, with descriptions of new genera and species, by Charles J. Gahan. List of Lepidoptera in a collection made by Emin Pasha in Central Africa, by Arthur G. Butler. Descriptions of ten new species of butterflies from the northwest coast of Madagascar, by H. Grose Smith. Description of two new Scarabæidæ of the genus *Phanæus*, by C. O. Waterhouse. Descriptions of new species of Lepidoptera collected by Mr. Herbert Ward at Bangala, on the Congo, by Emily Mary Sharpe. Descriptions of eight new species of Chalcosiidæ, by Herbert Druce. A few remarks on Prof. Packard's papers entitled, "Life-history of *Drepana arcuata*," and "Hints on the Evolution of the Bristles, Spines and Tubercles of certain Caterpillars," by A. G. Butler. Description of a new genus and species of Rhyncophorus Coleoptera, by D. Sharp.

THE TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, Part 4, 1890.*—A Catalogue of the Pyralidina of Sikkim, collected by H. J. Elwes and the late Otto Moller, by Pieter C. T. Snellen, with notes by H. J. Elwes. On a species of Aphideous insects infesting the bread-fruit trees in Ceylon, by Prof. John O. Westwood. Further notes on the synonymy of the genera of Noctuites, by A. G. Butler

RECORDS OF THE AUSTRALIAN MUSEUM, vol. i, No. 5, Sydney.—Coleoptera: Cicindelidæ, Carabidæ and Buprestidæ, by Thomas G. Sloane, with descriptions of new species.

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vol. v, Nos. 9 to 12.—Coleopterological Notices, by Thomas L. Casey, mostly devoted to Tenebrionidæ, with descriptions of new species, etc.

ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE, 2e serie, v suppl., 1887-1890.—Contribution to the Study of the Brain in the tracheate Arthropods, by G. Saint Remy; 14 plates, 274 pages. The present paper treats of the Myriapoda, Arachnida and Onychophora.

ZOOLOGICAL RECORD for 1889.—Insecta, by Dr. David Sharp.

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* Three plates, two colored.

Compte-Rendu. Societe Entomologique de Belgique, Dec. 6, '90. —Note on the Buprestidæ of Chota-Nagpore,* by C. Kerremans. Note on some Coleoptera Heteromera of Belgium, by L. Coucke. Note on the Trictenotomidæ, Prionidæ and Cerambycidæ of Chota-Nagpore,* by A. Lameere; *Kunbir*, *Sakuntala*, n. gen. Annotations to the lists of indigenous carnivorous Coleoptera, by A. P. de Borre.

Species des Hymenopteres d'Europe et d'Algerie, by Ed. Andre, 37e Fascicule, Nov. 1, 1890, 4 plates.

Archiv fur Mikroscopische Anatomie, xxxvii, heft 4, 1890. The malodoriferous glands of the Forficulidæ, by Dr. J. Vosseler; 1 plate.

Berliner Entomologische Zeitschrift, xxxv, heft 2, 1890. The group of the Hymenopterous genera *Leucospis* Fab., *Polistomorpha* Westw., and *Marres* Walk.: Monograph,* by A. Schletter; 2 plates, *L. Rileyi*, Mex., n sp. *Hilarimorpha* Schin. is a Leptid, C. R. Osten Sacken.

Zoologischer Anzeiger, Jan. 5, 1891.—On the embryology of *Phalangium*, V. Faussek.

Le Naturaliste, Jan. 15, 1891.—Diagnoses of new Acarina,* by Dr. E. Trouessart. Entomological Recreation [on the larva of *Teresias serra* Steph.], by M. Decaux.

Myriapoda Regni Hungariæ e Commissione Regiæ Societatis Hungaricæ Scientiarum Naturalium,* by Dr. Eugenius Daday de Deés. Budapest, 1889, 126 pp., 3 plates. A synopsis of the Myriapoda of Hungary, printed in Magyar, but with the specific, generic and other characters in Latin.

Mittheilungen der Section fur Naturkunde des Osterreichischen Touristen-Club. II. Jahrgang, Wien, 1890.—List of the Arthropoda hitherto found in caves in Europe, by E. Simon, L. Bedel and L. Ganglbauer; comprises Crustacea, Arachnida, Myriapoda, Coleoptera, Orthoptera, Thysanura and Diptera.

Schriften der Naturforschenden Gesellschaft in Danzig; Neue Folge, VII Bd., 3 heft, 1890.—Life-history of two snout beetles and Insects on ferns, by C. G. A. Brischke. Butterflies caught by *Drosera angelica* Huds., by Dr. H. von Klinggraeff. Addition to Bachman's contributions to the Dipterous fauna of the provinces of West and East Prussia, and Some Ichneumonidæ and Saw-flies entirely new, or new to West Prussia, by C. G. A. Brischke.

Il Naturalista Siciliano, November-December, 1890.—Contributions to the Lepidopterological Fauna of Sicily; descriptions of new species,* by L. Failla-Tedaldi. Studies in Sicilian entomology [Otiorrhynchidæ], by F. Vitale. The light produced by insects, by E Arculeo.

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* Contains new species other than North American.

JENAISCHE ZEITSCHRIFT FUR NATURWISSENSCHAFT, xxv, heft 1 and 2, Jena, 1890.—*Hemidiptera Haeckelii*, by Dr. N. Leon. 1 plate. The poison apparatus of *Formica rufa*, a reduced organ, by Dr. O. W. Beyer, 2 pls.

JAHRBUCHER DES NASSAUISCHEN VEREINS FUR NATURKUNDE, Jahrgang 43, Wiesbaden, 1890.—Contributions to the Lepidopterous Fauna of the Malay Archipelago. vi. On the Butterflies of East Java,* by Dr. A. Pagenstecher.

## Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES.—A regular meeting was held Jan. 22, 1891, Director Dr. Horn in the chair. Members present: E. T. Cresson, Martindale, Ridings, G. B. Cresson and Skinner. Associates: Calvert, Westcott, Fox, E. Seeber, Liebeck and Dr. Skinner. Mr. Neel visitor. Dr. Horn stated that he had been studying the species of *Agrilus*, and found them more numerous and more difficult than he had imagined, but he hoped to get them in such shape that students could do more with them. The characters of the claws were discussed. and the speaker said it was necessary to see the claws of both sexes and the front and hind claws also. He proposed to divide them into groups separated by different types of claws. The difficulties of the subject were illustrated by drawings on the blackboard, and characters of more or less value were mentioned and considered at length. Mr. Calvert spoke on the genus *Ischnura*, stating that there were two local species: *verticalis* Say and *Ramburii* Selys. Partly owing to the imperfect description in Dr. Hagen's Synopsis of 1861, he had hitherto mistaken the orange females of both *verticalis* and *Ramburii* as belonging to *Ramburii*. He believed that the orange females of *verticalis* could be distinguished from those of *Ramburii* by having a black lateral dorsal thoracic stripe wanting in *Ramburii*. Mr. Martindale mentioned that in the January number of NEWS was an article by Mrs. Slosson on *P. assimilans*, which showed how species could be lost for even a great number of years and then refound. The only specimens known until Mrs. Slosson's rediscovery were the two worn and damaged specimens in the British Museum. He exhibited colored figures of these interesting moths intended for ENTOMOLOGICAL NEWS. He also mentioned here rediscovery of *Seirarctia echo*. Dr. Horn called attention to the fact that, in 1850, on Dr. LeConte'e return from California, he described a species—*Acrepis maculata* The type of this went to the bottom on its way to Europe It was recently rediscovered by the speaker in a collection made by the late H. K. Morrison, and none have been found since.

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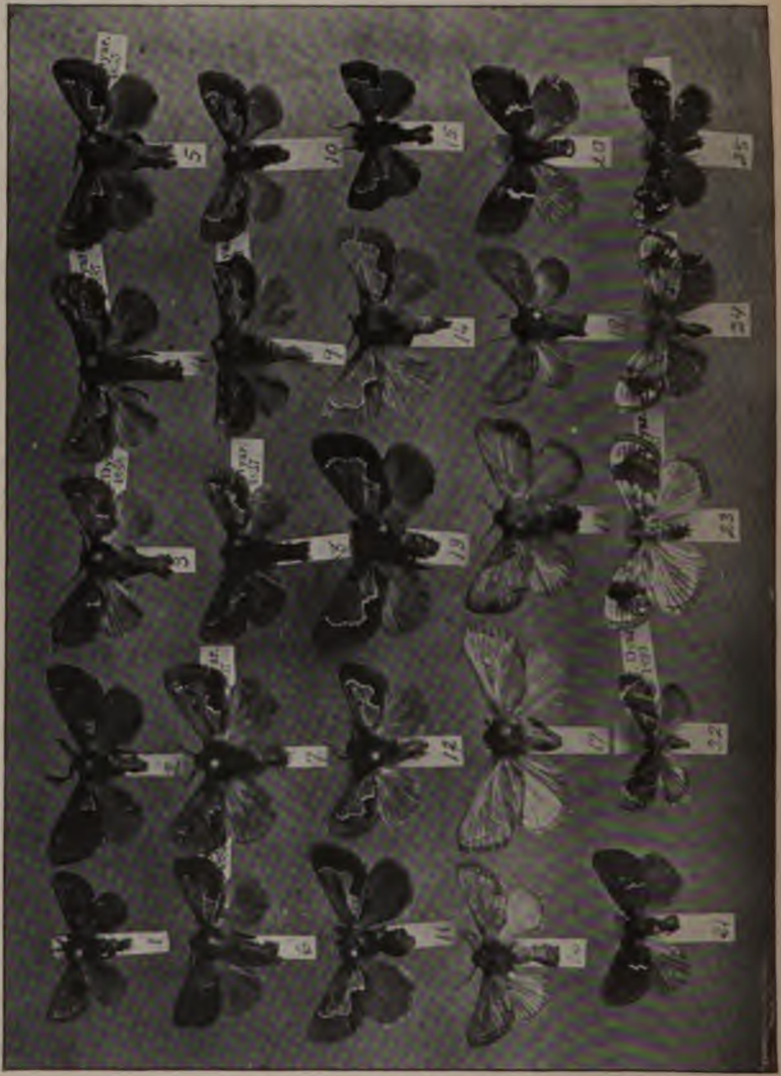
* Contains new species other than North American

ENTOMOLOGICAL NEWS for February was mailed February 2, 1891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# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. APRIL, 1891. No. 4.

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## A Revision of the Species of Euclea, Parasa and Packardia, with Notes on Adoneta, Monoleuca and Varina ornata Neum.

BY HARRISON G. DYAR.

(This paper will appear in its entirety in the Trans. Amer. Ent. Soc. 1891.)

After studying a series of specimens kindly loaned to me by Mr. E. L. Graef, as well as those in my own collection, I have reached the conclusion that the species *Euclea cippus* Cram. includes the considerable range in variation represented by figs. 1 to 11 on Plate IV.

**Euclea cippus** var. **interjecta** n. var. (Pl. iv, figs. 7 and 8.)

A row of green dots, sometimes partly confluent, connects the sub-apical spot with the outer part of the sub-basal spot.

**Euclea nana** n. sp. (Pl. iv, fig. 15.)

Purplish brown, the secondaries a little paler. On the primaries a small, round, discal dot, and two rounded pea-green patches, the sub-apical nearly circular, the sub-basal large, not deeply excavated externally, and both succeeded by orange ferruginous spots, broken on the veins.

**Parasa viridus** Reak. (Pl. iv, fig. 18.)

My reasons for naming the species of *Parasa*, as ab appear in the full article in Trans. Amer. Ent. Soc.

**Monoleuca subdentosa** n. sp. (Pl. iv, fig. 21.)

Allied to *semifascia*, but perhaps a little smaller. Upri silvery-white, narrow, twice regularly angulated, not median vein nor extending onto fringe. The space bet and the base of the wing is filled in with an ochero shading, paler than the rest of the wing.

## EXPLANATION OF PLATE IV.

Figs. 1, 2 and 3, *Euclea cippus*, var. *delphinii* Boisd.
" 4, 5 and 6, *Euclea cippus*, var. *querceti* Her.-Sch.
" 7 and 8, *Euclea cippus*, var. *interjecta* Dyar.
" 9, 10 and 11, *Euclea cippus*, var. *monitor* Pack.
" 12, *Euclea elliotii* Pearsall ♂.
" 13, " " ♀.
" 14, *Euclea pænulata* Clem. ♂.
" 15, *Euclea nana* Dyar ♂.
" 16, *Euclea incisa* Harv. ♂.
" 17, " " ♀.
" 18, *Parasa viridus* Reak. ♂.
" 19, *Parasa chloris* Her.-Sch. ♂.
" 20, *Monoleuca semifascia* Walk. ♀.
" 21, *Monoleuca subdentosa* Dyar ♀.
" 22, *Packardia elegans* Pack. ♂.
" 23, *Packardia geminata* Pack. ♂.
" 24, *Packardia albipunctata* Pack. ♀.
" 25, " " ♂.

## HUNTING CATOCALÆ.

BY JAS. S. JOHNSON.

I have been frequently asked, where do you find Catocalæ? And my answer invariably is, in the woc but how and when? To these questions I write this ans the young collector in entomology his first care is to l observer of the habits of insects; I think I can safely almost every butterfly and moth has its own peculiarit or resting, or something that distinguishes it from its co of another species. In hunting for Catocalæ during the it is well known that when disturbed they will fly gene a short distance to another tree, or perhaps not leave the tree on which disturbed, only alight a few feet lower, higher or around on the other side. It is also well known that after being disturbed they are more alert and quicker to take flight, whether it be from sound, sight or shadow of the hunter, I leave for conjecture. The next thing the student must learn is the bark of the trees; all barks are not alike, neither in color, shape, or markings; I mention this for Catocalæ resemble the barks so nearly that one must become practiced to anything out of the line of the usual markings of the tree to detect them.

Now, with this brief introduction, we will go to some piece of wood-land; a good place would be where there is a fair quantity of large trees, some young beech, plenty of underbrush, and better still where the owner does not turn his cattle in. On arriving we arrange our tools and collecting-box; the collecting-box should be made of as light material as possible, book-shaped, cork-lined, and in depth to pin on each side, hang by a strap over the shoulder, and a little in front of the body on the left side, this will give the collector ample play with both arms and hands. The collecting-bottle can be made either of tin or a wide-mouthed glass jar, and charged with cyanide of potassium or ether; should I be going a long distance I take the former, if near by the latter. To make the former I get from the druggist a glass jar, some four or five inches high, with a mouth not under two inches in diameter, take one ounce or so of cyanide of potassium, break it into small pieces, and put into your jar, then pour on dry plaster of Paris to nearly cover the cyanide, next mix some plaster of Paris with water about the consistency of thick cream, pour this over the rest, about a quarter of an inch thick; when dry your bottle is ready for work. If you use ether, place a wad of raw cotton, say one-half an inch thick at the bottom of the jar and make a tight fitting piece of perforated card board or cork to cover it, charge it by pouring the ether in, about a tablespoonful; keep this well corked, and always take a small vial of ether with you to recharge when necessary. The next instrument, and the most important to me, I call a gig or stabber, made from a metallic pen-holder, or even a smooth stick would do, by fastening on the end three needles, triangular shaped, thus ∴; this instrument I find extremely useful in capturing any moths at rest, by piercing them through the thorax, they adhering to the instrument. In places where you cannot get your collecting-bottle you can readily take them by this means. Do not take a net for any moth, it spoils all the beauty. Your next and last article is a sapling about four or five feet long, which you can cut in the wood from a bough of a tree or undergrowth; trim it clear of leaves and switches; this is for rubbing or beating the trees to disturb any you have overlooked.

Place your collecting-bottle in your right hand coat pocket, the gig over your ear as a clerk would a pen, the sapling in your right hand, and start through the wood. First we come to some undergrowth or brushy beech tree, rattle among the leaves with your rod and watch results; should you disturb any watch where they alight and go for them, if not move on and try again. We now come to a large tree, examine carefully the bark as far as the eye can reach to the ground, note the layers and fissures of the bark; should you see any V-shaped marking or inverted Λ examine closely, the chances are a Catocala; use your bottle or stabber; after taking off all you see, or if none, then take the rod and go around the tree rubbing it up and down the bark, or beat it a few sharp raps; if any they will fly to a near by tree, watch and go for them, step lightly, move cautiously, steady your hand, you have it. The best time to hunt for them is on a close, hot afternoon between two and five o'clock, more particularly if there has been three or more successive hot days. Yet you can find some at any time of day, I have taken some as early as five o'clock A.M., and all along until sun down, but as the day grows on towards night, the wood becoming dusk, they are prepared for flight and on the alert, and it becomes hard to follow their flight. It is almost useless to go hunting for Catocalæ after a heavy rain or a thunder gust; you may capture a few, but nearly all are battered and torn. I was never successful in this locality by baiting, sugaring or night hunting, having tried several formulæ, perhaps, however, it was because I could not give it the time for a successful issue. My esteemed friend, Dr. James S. Baily (now deceased), was exceedingly fortunate at baiting, near Albany, N. Y., capturing hundreds of fine specimens. The bait he used was composed of sour beer, molasses and brown sugar; he would paint the trees with this mixture during the afternoon and make the captures between 8 o'clock and midnight; sometimes it would be nearly a week before they would take to the bait.

Dr. Hammond and I tried this formula during last Summer, but with little or no success, we also soaked strings of dried apples in the mixture and placed them on the trees with the same result, I then plastered some decayed bananas on the bark of the trees, from which we captured a few Catocalæ and numbers of small Noctuæ. I have no doubt but the decayed fruit if fairly tested and tried would be a success, either bananas or pears. To collect at night you need only your collecting-box, bottle, and a lantern; I painted or baited the trees about waist high and a few inches square, then with a leather belt around the waist, with a dark lantern fastened thereto, I could walk up to the trees with my hands free and plenty of light. I noticed on nights during an electrical storm, *i.e.*, plenty of flashes of heat lightning with no thunder, there were few or no specimens of any kind.

The following table will give the time of appearance of the different species in the vicinity of Frankford, Philadelphia, compiled from my diary of several years. I might remark that north or south of here would make a few days difference either way, and again after a dry hot Spring would make ten or twelve days difference.

| | First Capture. | Last Capture. |
|---|---|---|
| C. ilia. | June 24 | Sept. 8 |
| coccinata | July 23 | Aug. 4 |
| grynea | June 24 | July 26 |
| ulalume | July 23 | Aug. 13 |
| insolabilis | June 25 | Sept. 8 |
| Angusi | July 29 | " 18 |
| amica | June 27 | " 7 |
| var. linella | " 27 | " 5 |
| ilia var. | " 28 | " 8 |
| serena | " 28 | " 5 |
| ilia var. | " 28 | " 27 |
| flebilis | July 4 | |
| cordelia | June 28 | July 21 |
| minuta | July 8 | Aug. 13 |
| ultronia | " 8 | Sept. 8 |
| var. mopsa | " 9 | Aug. 16 |
| Judith (Levettii) | " 10 | Sept. 27 |
| obscura (residua) | " 16 | " 10 |
| var. simulatilis. | " 10 | " 27 |
| neogama | " 10 | Aug. 28 |
| epione | " 11 | Sept. 21 |
| palæogama | " 14 | Aug. 22 |
| var. phalanga | " 14 | July 21 |
| subnata | " 14 | " 25 |
| tristis | " 16 | Sept. 8 |
| amasia | " 19 | " 10 |
| retecta | " 19 | Aug. 10 |
| C. parta | July 21 | Oct. 10 |
| habilis | " 25 | Sept. 27 |
| ponderosa | " 26 | " 27 |
| sordida | " 14 | July 16 |
| cara | Aug. 6 | Sept. 13 |
| var. carissima | " 8 | " 10 |
| cerogama | " 8 | " 2 |
| desperata | " 9 | " 1 |
| amatrix | " 9 | Oct. 8 |
| var. nurus | " 10 | Sept. 27 |
| Robinsonii | " 10 | " 7 |
| piatrix | " 10 | Aug. 31 |
| innubens | " 14 | Oct. 6 |
| var. hinda | " 1 | Aug. 28 |
| var. flavidalis | " 15 | " 23 |
| var. scintillans. | " 16 | " 16 |
| antinympha | " 20 | " 28 |
| concumbens | " 1 | " 28 |
| unijuga | " 28 | Sept. 21 |
| marmorata | Sept. 6 | " 6 |
| viduata | Aug. 28 | " 12 |
| lacrymosa | " 20 | " 21 |
| lacrymosa var. | " 25 | " 1 |
| relicta | " 30 | " 30 |
| Total, 51 species and varieties. | | |

# ELEMENTARY ENTOMOLOGY.

## Tenth Paper.—THE ORDERS OF INSECTS.

In the first paper of this series (ENT. NEWS, Vol. I, pp. 72, 73) was indicated the division of the Arthropoda into classes. Of these, the Insecta (Hexapoda) formed the fifth class. The class of insects is divided into orders. Entomologists differ in the classifications which they employ. In this paper will be presented the chief classifications used in this country, without attempting to designate any one classification as the best.

The oldest and the simplest classification is that used in Dr. Packard's "Guide" in the editions previous to the sixth. The class Insecta is divided into three orders: Hexapoda, Arachnida and Myriapoda. The order Hexapoda is divided into the following suborders:

1. **Hymenoptera** (membrane wings[*]). Head large. Mouth-parts developed both for biting and sucking. Wings small, powerful, with comparatively few and irregularly branched veins. Transformations complete. In the higher[†] and more typical forms, the first abdominal segment is intimately united with the thorax. Examples: Bees, Wasps, Ants, Saw-flies.

2. **Lepidoptera** (scale wings). Body cylindrical, compact. Head small, clypeus large (in proportion). Mouth-parts developed for sucking Maxillæ prolonged into a tubular "tongue." Mandibles obsolete. Wings broad, regularly veined, covered with minute scales. Transformations complete. Butterflies, Moths.

3. **Diptera** (two wings). Only two wings, the hind pair represented by halteres. Thorax greatly centralized, more or less globular. Mouth-parts developed for sucking. Labrum, and the bristle-like mandibles and maxillæ ensheathed partially within the labium to form a beak. Maxillary palpi present. Transformations complete. Mosquitos, House-flies

4. **Coleoptera** (sheath wings). Front wings developed as elytra which cover the folded hind wings, and also the two posterior thoracic segments and the abdomen. Mouth-parts developed for biting. Transformations complete. Beetles.

5. **Hemiptera** (half wings). Mouth-parts developed for sucking. The style-like mandibles and maxillæ ensheathed by the labium to form a beak Labrum small, short. Maxillary palpi absent. Prothorax free, large Front wings often half horny, half membranous (hemelytra). Transfor-

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[*] As each ordinal name is used for the first time in this paper, it will be followed by a literal translation of the Greek words from which it is formed.

[†] *I.e.*, more specialized.

mations incomplete. Plant-lice, Scale-insects, Cicadas, Chinch-, Squash- and Bed-bugs, Lice.

6. **Orthoptera** (straight wings). Mouth-parts developed for biting. Front wings developed as tegmina to cover the folded hind wings. Hind legs large, adapted for leaping. Transformations incomplete. Grasshoppers, Crickets, Cockroaches, Earwigs.

7. **Neuroptera** (nerve wings). Wings large, broad, net-veined, membranous. Mouth-parts developed for biting. Transformations complete and incomplete. White Ants, Stone-, May- and Dragonflies, Ant Lions, Fish Moths and Spring Tails.

In the sixth and following editions the Fish Moths and Spring Tails are considered as a distinct order, 8. **Thysanura** (fringe tails) whose characters are wingless, no transformations.

A second classification is that used by Prof. Comstock in his "Introduction to Entomology," 1888, pp. 48, 49:

I. Wingless insects which show no evidences of having descended from winged ancestors (*i.e.*, in which the thorax is simple in structure), and which undergo no metamorphosis (*Synaptera*). Order 1. **Thysanura.**

II. Winged insects; or wingless insects in which this condition is the result of a retrograde development, indicated by the complicated structure of the thorax, or by the presence of wings in closely allied forms (*Pterygogenea*).

1. Metamorphosis incomplete, *Ametabola* (without change).

A. Mouth-parts formed for biting, *i.e.*, with the mandibles and maxillæ in the form of jaws.
    *a.* The two pairs of wings similar in structure, membranous.
    Order 2. **Pseudoneuroptera** (false Neuroptera).
    *b.* The first pair of wings parchment like (tegmina); the second pair membranous, and folded in plaits longitudinally.
    Order 3. **Orthoptera.**

B. Mouth-parts intermediate in structure between those of the biting insects and those of the sucking insects, viz, with bristle-like mandibles, and with flat triangular maxillæ.
    Order 4. **Physopoda** (swelled feet).

C. Mouth-parts formed for sucking, viz., with the mandibles and maxillæ bristle like. Order 5. **Hemiptera.**

2. Metamorphosis complete. *Metabola* (change).

A. Mouth-parts formed for biting.
    *a.* The two pairs of wings similar in structure, membranous, with many veins and cells. Order 6. **Neuroptera.**
    *b.* The first pair of wings (elytra) much thickened, horny throughout their entire length, and meeting in a straight line down the back; the second pair membranous. Order 9. **Coleoptera.**

B. Mouth-parts formed for both biting and sucking, viz., with the mandibles in the form of jaws; and with the maxillæ and labium fitted for taking liquid food. Both pairs of wings membranous, with few veins and cells. Order 10. **Hymenoptera.**

C. Mouth-parts formed for sucking.
   - *a.* With four wings clothed with minute, imbricated scales; mandibles rudimentary; maxillæ developed into a sucking tube. Order 7. **Lepidoptera.**
   - *b.* With only two wings; hind wings represented by a pair of knobbed, thread-like organs (halteres); mandibles and maxillæ bristle like. Order 8. **Diptera.**

In this classification, Orders 1, 3, 7, 8, 9 and 10 correspond to the similarly named suborders of the "Guide;" 2 (White Ants, Stone-, May- and Dragonflies) and 6 (Ant Lions) correspond to the Neuroptera, and 4 (*Thrips**) and 5 to the Hemiptera of the "Guide."

The classification used by Dr. Packard in his "Entomology for Beginners," second edition, 1889, and which he says† will probably be introduced into the next edition of his "Guide," follows. After the statement of the characters of each order, is placed the common and the generic names of some of the representative insects thereof.

Series I. Ametabola.—Metamorphosis incomplete.

Order 1. **Thysanura.**—Wingless, minute, with a spring, or abdomen ending in a pair of caudal stylets; usually no compound eyes; no metamorphoses. Fish moth, *Lepisma;* Spring tail, *Podura.*

2. **Dermaptera** (skin wings).—Body flat; abdomen ending in a forceps; fore wings small, elytra-like; hind wings ample, folded under first pair. Earwig, *Forficula.*

3. **Orthoptera.**—Wings net-veined; fore wings narrow, straight, not often used in flight; hind wings large and folded when at rest under the first pair. Cockroach, *Blatta;* True Locust, *Acridium;* Cricket, *Gryllus*,

4. **Platyptera** (broad wings).—Body usually flattened. Pronotum usually large and square; often wingless. Bird lice, fam. Mallophaga; Stone-fly, *Perla;* Book louse, *Psocus;* White Ant, *Termes.*

5. **Odonata** (toothed, referring to the mandibles and maxillæ).—Prothorax small; remainder of thorax spherical; both pairs of wings of nearly the same size, net-veined. Larvæ and pupæ aquatic; labium of larva forming a mask. Dragonfly, *Libellula.*

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* "It should be borne in mind that the insect commonly called *The Thrips*, that infests the leaves of grape, is not a member of this order [Physopoda,] but one of the Leaf-hoppers [*Erythroneura*, family Jassidæ, of the order Hemiptera]. The misapplication of the name Thrips to this insect is often the cause of confusion."—Comstock, Intro. p. 124

† Guide, ninth edition, 1889. Preface.

6. **Plectoptera** (plaited wings).—Mouth-parts nearly obsolete. Wings net-veined; hind pair small, sometimes wanting. Abdomen ending in three filaments. Larvæ aquatic, with large jaws and with gills on the sides of the hind body. Mayfly, *Ephemera.*

7. **Thysanoptera** (fringe wings).—Mouth-parts forming a short conical sucker; palpi present; wings narrow, net-veined, fringed; feet bulbous at the end, without claws. *Thrips.*

8. **Hemiptera.**—Mouth-parts forming a sucking beak. Prothorax usually large; fore wings often thickened at base. Louse, *Pediculus;* Scale insect, *Coccus;* Plant louse, *Aphis; Cicada;* Chinchbug, *Blissus;* Squashbug, *Anasa;* Bedbug, (*Cimex*), *Acanthia.*

Series II. METABOLA.—Metamorphosis complete.

9. **Neuroptera.**—Wings net-veined; mouth-parts free, adapted for biting; ligula large, rounded; pronotum large, square. Larvæ often aquatic. *Corydalis.* Lacewing fly, *Chrysopa;* Ant lion, *Myrmeleon.*

10. **Mecoptera** (length wings).—Wings somewhat net-veined or absent; head lengthened into a beak-like projection. Larvæ like caterpillars. Scorpion fly, *Panorpa.*

11. **Trichoptera** (hair wings).—Wings and body like those of Tineid moths [clothed with hairs]; mandibles obsolete in the imago. Larvæ usually aquatic, living in cases. Caddis fly, *Phryganea.*

12. **Coleoptera.**—Fore wings thick, ensheathing the hinder pair, which are alone used in flight; mouth-parts free, adapted for biting. Beetles, *Carabus, Cicindela, Scarabæus;* Weevil, *Curculio; Chrysomela;* Lady bird, *Coccinella.*

13. **Siphonaptera** (tube, without wings).—Wingless; mouth-parts adapted for sucking. Larvæ maggot-like, but with a well developed head and mouth-parts. Flea, *Pulex.*

14. **Diptera.**—Only two wings; mouth-parts adapted for lapping and sucking. Mosquito, *Culex;* Housefly, *Musca;* Horsefly, *Tabanus.*

15. **Lepidoptera.**—Body and wings covered with scales; maxillæ lengthened into a very long tongue. Larvæ (caterpillars) with abdominal legs. Butterfly, *Papilio;* Moths, *Sphinx, Bombyx, Noctua, Phalæna, Tinea.*

16. **Hymenoptera.**—Wings clear, with few veins; mouth-parts with a variety of functions, *i.e.*, biting, lapping liquids, etc. In the higher families the thorax consists of four segments, the first abdominal segment of the larva being transferred to the thorax in the pupa and imago. Honey Bee, *Apis;* Wasp, *Vespa;* Ant, *Formica;* Ichneumonfly, *Ichneumon;* Gallfly, *Cynips;* Sawfly, *Tenthredo.*

The correspondence of these orders to those of Prof. Comstock is as follows; 1, 8, 12, 15 and 16 to the similarly named orders; 2 and 3 to the Orthoptera; 4, 5 and 6 to the Pseudoneuroptera; 7 to the Physopoda; 9, 10 and 11 to the Neuroptera; 13 and 14 to the Diptera.

In the Standard Natural History, edited by J. S. Kingsley, vol. ii, 1884, the orders are:

1, **Thysanura**; 2, **Dermatoptera**; 3, **Pseudoneuroptera**; 4, **Neuroptera**; 5, **Orthoptera**; 6, **Hemiptera**; 7, **Coleoptera**; 8, **Diptera**; 9, **Aphaniptera** (unseen wings); 10, **Lepidoptera**; 11, **Hymenoptera.**

Here 2 and 9 correspond to the Dermaptera and Siphonaptera of the "Entomology for Beginners;" otherwise the orders correspond to the similarly named orders of Prof. Comstock, except that No. 6 includes both his Hemiptera and Physopoda.

In Claus and Sedgewick's Text Book of Zoölogy, vol. i, 1885, the orders stand:

1, **Thysanura**; 2, **Orthoptera**; 3, **Neuroptera**; 4, **Strepsiptera** (twisted wings); 5, **Rhynchota** (beaked); 6, **Diptera**; 7, **Lepidoptera**; 8, **Coleoptera**; 9, **Hymenoptera.**

Here the Orthoptera includes orders 2, 3 and 4 of Prof. Comstock; the Rhynchota are his Hemiptera; the Strepsiptera (which includes a single family of beetles, Stylopidæ, having only the hind wings developed, the front wings represented by pseudo-halteres) and the Coleoptera are equivalent to his Coleoptera; the other orders are the same as his.

Other names sometimes used as ordinal are **Plecoptera** (folded wings) for the family Perlidæ, Stone flies; **Corrodentia** (gnawers) for the Mallophaga, Psocidæ and Termites; **Homoptera** (same wings) and **Heteroptera** (diverse wings) for two divisions of the Hemiptera, the one having wings of the same thickness throughout, the other with the front wings as hemelytra; **Euplexoptera** (well-folded wings) for Dermaptera.

On comparing the classification from the "Entomology for Beginners" with the others here quoted, it will be seen that the differences between them depend very largely on the answers given to such questions as this: Are the groups Platyptera, Odonata and Plectoptera, for instance, of the same value, *i.e.*, as distinct from each other, as the Lepidoptera are from the Hymenoptera? Ever-widening knowledge alone will settle such questions.

Two things must be remembered in dealing with classification. The first is that very many ordinal, family and generic characters admit of exceptions in the shape of intermediate forms. As Dr. Leidy has said: "Our divisions in nature [are,] to a great extent, matters of convenience."* Secondly, the natural arrangement of the orders and other groups is not linear. It is rather to be compared to the position of countries upon a map, or to the branches of a tree. This latter comparison is especially useful when taken into connection with the evolution of species.

* Lecture of Oct. [illegible], 1888, at Biological Department, University of Pennsylvania, Philadelphia. See also Ent. News, vol. ii, p. 47, at bottom.

With this the papers on Insects in general conclude. Imperfect as they are, the writer will be repaid for his labor—almost wholly of compilation—if they shall be helpful to any students of Entomology. P. P. C.

The first of a series of elementary papers on Lepidoptera will appear in the May number of ENTOMOLOGICAL NEWS.

# INGUROMORPHA SLOSSONII Hy. Edw.

BY HENRY EDWARDS.

On page 183, vol. iii, of "Entomologica Americana," I published, under the above name, a description of a curious Cossid taken by Mrs. A. T. Slosson, in Florida, early in 1887. The species was so unlike anything with which I was familiar, that I concluded it to be new, but before describing it I submitted it to Dr. Packard and Prof. J. B. Smith, to both of whom it was unknown. I therefore placed it on record. Sometime afterwards I forwarded to Mr. A. G. Butler, of the British Museum, a drawing of the insect made by Mrs. Slosson, and was astonished to find from him that the species was = *Cossus basalis* Walk., which is given in the Catal. B. M. p. 1523, with the "country unknown." In this connection I think it advisable to give Walker's description in full, which is as follows:

> "Male.—Whitish, moderately stout. Head, palpi and antennæ blackish. Palpi extending as far as the head; third joint acute, conical. Antennæ slightly pectinated, a little longer than the thorax. Abdomen extending for more than half its length beyond the hind wings. Wings narrow, slightly reticulated with minute transverse black marks. Fore wings with a black band near the base, and with a black curved subapical band. Length of the body 6 lines; of the wings 14 lines."

In May, 1888, I visited England, and saw the type in the British Museum, without any record of locality, or other label by which it could be recognized. It seems to me now highly probable that it might be among the specimens taken by Mr. Edward Doubleday during his visit to the United States.

There was no doubt, whatever, of the identity of Walker's type with Mrs. Slosson's specimens. But a greater surprise than this was in store for me. Early in 1889, business led me to Boston, and, as usual, I visited my friend, Mr. Samuel Henshaw, of the Boston Natural History Society. He showed me the volume of original drawings by Abbot, presented to the Museum by the late Dr. Asa Gray, and on plate 108 of the series I found excellent figures of both ♂ and ♀ of the Cossid, with colored figures also of the larva and pupa. But the ♀ is no other than the beautiful moth described by the late Dr. James Bailey as *Cossula magnifica* ("Papilio," vol. ii, p. 93, 1882). Dr. Bailey's description, with a colored figure of ♂ and ♀ and of the pupa, was republished in Bulletin No. 3, Division of Entomology U. S. Department of Agriculture, 1883, but Dr. Bailey has undoubtedly fallen into an error in figuring what he calls the ♂, as the specimens in his cabinet were both females, and in fact none but females have been known until the discovery of the identity of the species with *C. basalis*, while so accurate an observer as Abbot would not be likely to be confounded in the species. He gives it as one especially familiar to him, as evidenced by his drawings of the early stages. The antennæ are heavily pectinated in both sexes and the neuration would appear to give the species generic rank, so that Dr. Bailey was undoubtedly right in forming a new genus for its reception. The synonymy will, therefore, stand thus:

Genus **COSSULA** Bailey.

*Cossus* Walk.
*Inguromorpha* Hy. Edw.

**C. basalis** Walk. ♀ B. M. Cat. p. 1523, 1856.
*Cossula magnifica* ♀ Bailey, Papilio, vol. ii, p. 93, 1882.
*Inguromorpha Slossonii* Hy. Edw. Ent. Am. vol. iii, p. 183, 1888.

The females have been taken by Mr. A. Koebele, near Talahassee, and by Dr. Wittfeld at Indian River, while Mrs. Slosson's ♂ specimen was obtained at Jacksonville at the electric light. The ♂ bears a somewhat superficial resemblance to the same sex of *C. querciperda*. I should like to add that I am convinced that the ♀ type specimen of *C. plagiata* in the British Museum is nothing more than *Robiniæ* ♀, but that *C. populi* Walk. is a very distinct species, differing from any I have seen elsewhere.

# A CONTRIBUTION TO THE ODONATA OF MAINE.

**Specimens in the Maine State College Collection, or taken near Orono, Penobscot County, Me., in 1890.**

BY F. L. HARVEY.

(Continued from p. 51, Vol. II, No. 3.)

7. *Enallagma civile* Hag.—Orono, College Collection.

8. *Enallagma Hageni* Walsh.—Common over Chemo bog.

9. *Nehalennia irene* Hag.—Orono, College Collection.

10. *Lestes hamata* Hag. (*L. forcipata* Hag. Syn. 1861).—September 3d, Frog Pond, Orono. Common.

11. *Lestes forcipata* Ramb. (*L. hamata* Hag. Syn. 1861).—Orono, College Collection.

12. *Lestes rectangularis* Say.—July 15th, September 12th. Over bogs. Common.

13. *Lestes disjuncta* Selys.—July 15th, August 20th, September 3d; over bogs and ponds; several pairs mating. Abundant.

14. *Lestes inequalis* Walsh.—July 15th; Chemo bog. Several males and females.

15. *Lestes unguiculata* Hag.—September 12th. Over bog near Penobscot River.

## Tribe II.—ÆSCHNINA.

### Subfamily 3.—ÆSCHNINA.

16. *Anax junius* Drury.—Orono, State College Collection.

17. *Æschna janata* Say —Orono, State College Collection.

18. *Æschna constricta* Say.—Orono. Common over small brooks in meadows, August to October.

19. *Æschna verticalis* Hag.—Orono. Common over meadows, bogs and rivers.

We have one specimen that agrees with this species in markings, but the length is 78 mm. Alar expanse 100 mm.; ante cubitals 23; post cubitals 12 on the right wing and ant. cu. 21; p. c. 13 on the left wing. This specimen has a cross vein in the first p. c. of right wing and the seventh p. c. of same wing is very narrow.

20. *Æschna eremita* Scudder.—Orono, College Collection.

21. *Æschna clepsydra?* Say.—Orono, College Collection.

22. *Neuræschna vinosa* Say.—Orono, College Collection.

### Subfamily 4.—Gomphina.

23. *Gomphus exilis* Selys.—Orono, College Collection.

24. *Gomphus spinosus* Selys.—Orono, College Collection.

25. *Gomphus nævius* Hag.—July 15th, single ♀; Chemo Stream, over water. This specimen was referred to Mr. P. P. Calvert, who made the following note:

"This specimen agrees best with the description of *G. nævius* Hag. (in 4th Additions au Synopsis des Gomphines, p. 57), although there are some slight color difference. *G. nævius* Hag. was described from a ♀ from Pennsylvania. It is stated to be very near *G. albistylus* Hag. (4th Additions, p. 55) described from a ♀ from Maine, and some doubt is expressed whether the two may not be one species. The ♂ of neither has been described. Until they are proved to be the same, this specimen should stand for *G. nævius*, which it resembles more than *G. albistylus*."

26. *Hagenius brevistylus* Selys.—July 15th, single ♀. Over Chemo Stream.

## Tribe III.—LIBELLULINA.

### Subfamily 5.—Cordulina.

27. *Cordulia libera* Selys.—August. Single ♂; over small lake, Greenfield.

28. *Cordulia Uhleri* Selys.—Orono, College Collection.

29. *Cordulia cynosura* Say.—Orono, College Collection.

### Subfamily 6.—Libellulina.

30. *Plathemis trimaculata* De Geer.—Common over small brooks and ponds; August and September.

31. *Libellula 4-maculata* Linn.—Common over brooks; August and September.

32. *Libellula exusta* Say.—July 15th. Common over Chemo Stream.

33. *Libellula pulchella* Drury.—Orono, College Collection.

34. *Leucorhinia proxima* (Hagen MS.) Calvert.—Orono, College Collection.

35. *Leucorhinia intacta* Hag.—July 15th, Chemo Stream. Many pairs mating. The labium of all our specimens black, with the external part of the lobes a little white. The labrum cream colored.

36. *Diplax rubicundula* Say.—Orono. Very common. Sometimes fifty in sight at one time over small bogs and creeks in meadows. The males were repeatedly seen supporting the females while they were depositing eggs. The female clasped the male about the middle of the abdomen with her feet, the end of her abdomen hanging over behind. The two flew over the water, occasionally lowering quickly until the end of the female abdomen touched the water when the eggs were probably deposited. We noticed this species feed upon the young of *Diplax vicina* Hag. This is the most common species here from July to October: quite abundant over grain fields in dry places. One ♀ laid 67 spherical white eggs .02 inches diam. after being caught; eggs laid rapidly and were dry.

37. *Diplax vicina* Hag.—Orono; quite common about low meadows and small creeks. September.

38. *Diplax semicincta* Say.—Orono; common over meadows and grain fields with *D. rubicundula* July to October.

## REMARKS.

The specimens in the college collection are all marked "Orono," but are without date of collection, habitat, or collector. We presume they were collected by Prof. C. H. Fernald, formerly of the Maine State College. The authority for the determinations is not known, but the writer has compared the specimens with the descriptions, and in most instances, is satisfied that they are correctly named. The specimens of *Æschna clepsydra* and *eremita* in the college collection have defective abdominal appendages. As it is upon the structure of these that the above species are separated, the writer is unable to tell whether the specimens are correctly named. From the general characters it is certain that the specimens belong to one or both of the above species, and, as they are separated in the collection, both may be included in the list provisionally, awaiting the taking of fresh material. We are under great obligations to Miss Mattie Wadsworth, Manchester, Me., for the loan of specimens for comparison, and to Mr. P. P. Calvert, Philadelphia, Pa., for identifying some of the troublesome species. The list does not represent all the Odonata found here, as several species were seen that were not taken, and no great pains have been taken to collect exhaustively.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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**In the future all papers received for publication in the News will be printed according to date of reception.**

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Prof. P. R. UHLER has lately been elected Provost of the Peabody Academy of Sciences, Baltimore.

STRANGERS TO THIS VICINITY.—On September 8th, at the electric light, I captured a fine, fresh *Phlegethontius cingulata*, and on the morning of October 4th found a beautiful *Philampelus vitis* on my veranda, apparently just emerged.—JAS. S. JOHNSON.

DURING the past month I have been watching the electric lights in the streets closely for *Euglyphia harogylyphisa*, and I discovered that our chickens are quite abreast of the times for smartness. One of our boys lived near a light on the outskirts of the city that I knew in former years to be a particularly good one, and I carefully instructed him to be up just about daybreak every morning to get ahead of the chickens living in the neighborhood. I may state here that the species does not seem to fly much before 12 P.M. He met with very little success, and I determined to investigate. I went Saturday night and watched, and the secret was out; there was about a dozen chickens—they stay on the edge of the sidewalk all night—they seem to sleep a little while, wake up, walk out to the light, fill up with the insects that have fallen, go back, sleep an hour longer, then go out and repeat it, keeping it up all night, in fact never go to roost at all. How is that for industry?—J. T. MASON.

I WAS interested in what Mr. E. P. Van Duzee says in the February number of the ENTOMOLOGICAL NEWS about "Another Immigration Theory." I have in my collection an example of *Erebus odora* which was caught by Wm. H. Rice at 60 Park Ave., Chicago, Ill., in 1887; 60 Park Ave. is in the centre of the residence portion of the west side. He noticed it fly under his front porch, and, procuring a strawberry-box, captured it and brought it to me alive. After submitting it to a short stay in the cyanide bottle I spread it and found I had a prize. It is 6¼ in. spread, with antennæ 1½ in. long, perfect to the very tip. The moth is very perfect, much more so than any specimen I have seen. It was evidently lately hatched, and could not have come any great distance after emerging from its chrysalis.—W. E. LONGLEY.

A WELL-GROWN larva of *Ecpantheria scribonia* was mailed to me from Charleston, S. C., Oct. 15, 1890, arriving two days later. Fed for two weeks on cabbage and then refused food, retiring to the top of the cage, where it remained immovable till Jan. 1, 1891, when it spun a thin cocoon. Exactly three weeks later, on January 21st, the imago appeared, a beautiful female, measuring four inches. This larva should have hibernated, but perhaps the heat of my room hastened the transformation. Those who wish this beautiful insect should obtain the larva from friends in the South, where it is not uncommon, as it is easy to rear, taking kindly to cabbage, which is readily procured and kept fresh. I, myself, would like a lot of the larva this Spring, and will give good exchange or pay cash for same.—R. OTTOLENGUI, 115 Madison Ave., N. Y.

THE recent notes in ENT. NEWS concerning insects attracted to electric light call to mind an observation of my own while in Washington, D. C., the past Summer. While looking over the swarms of insects covering the ground under certain lights, I noticed among them a number of Carabidæ of various species eagerly feasting upon the bodies of the fallen insects. Whether they were first attracted to the light and then turned their attention to their easy prey, or whether the abundance of food was itself the attraction, it would be interesting to determine. In either case it appears that these voracious creatures have readily adapted themselves to the improved conditions of modern society, and are glad to utilize electric lighting to their own advantage. Doubtless the same point has often been observed by other collectors, but I do not recollect of its mention in any of the journals I have read.—HERBERT OSBORN.

A SPIDER FISHERMAN.—On the 10th of last May Messrs. Leng, Beutenmüller, Thompson and myself were rambling among the innumerable little hills near Grasmere Station, on Staten Island, and in the late afternoon came to a small, wood-shaded pond. Several moderately large spiders were on its surface, a few feet from the shore, and it so happened that while I was watching one of them, in particular, that rested quietly, it suddenly made a rapid motion and seized a little silvery fish over an inch in length. It held it firmly and remained as stationary as it had been before the capture. A number of water-beetles (Gyrinidæ) now came swimming about the spider, no doubt being anxious to share in the feast, but they quickly decamped upon the approach of the water-net that captured the Arachnid. In the fifth volume of the Boston Journal of Natural History, *Dolomedes sexpunctatus* is described by Hentz, and the characters given there agree admirably with the specimen in question. The account further adds that, "This species dwells on ponds, and dives with great agility, hiding itself under floating leaves or rubbish when pursued." These spiders swim, or skate on the surface of the water, by using the two middle pairs of legs as oars, while the fore and hind pairs serve as supports.—WILLIAM T. DAVIS.

## Identification of Insects (Images) for Subscribers.

**☞ Owing to the space taken up by this department the names will not be published in the future, but sent by mail direct to those sending the specimens for identification.**

WM. LOWENSTEIN.—1, *Pterostichus Sayi*; 2, *Chariessa pilosa*; 3, *Ellychnia corrusca*; 4, *Batyle suturalis*; 5, *Podabrus brunnicollis*; 6, *Podabrus tomentosus*; 7, *Telephorus lineola*; 8, *Telephorus pusillus*; 9, *Ischyrus 4-punctatus*; 10, *Stenosphenus notatus*; 11, *Elaphidion parallelum*; 12, *Dorcashema alternatum*.

W. M. HILL.—1, *Aphodius inquinatus*; 2, *Bradycellus rupestris*; 3, *Agonoderus pallipes*; 4, *Tenebrionellus tenebrioides*; 5, *Chrysomela similis*; 6, *Stenolophus conjunctus*; 7, *Melanolestes picipes*; 8, *Gastroidea polygoni*; 9, *Gastroidea cyanea*; 10, *Chlænius tricolor*; 11, *Brachyacantha ursina*; 12, *Agonoderus pallipes*.

D. B. YOUNG.—1, *Silvanus imbellus*; 3, *Corticaria grossa*; 4, *Ceruchus piceus*; 6, *Ephistemus apicalis*; 7, *Tenebrionellus tenebrioides*.

F. H. HILLMAN.—13, *Plagiodera prasinella*; 14, *Anthrenus scrophulariæ*; 15, *Pristocelis quadricollis*; 16, *Phyllotreta albionica*; 17, *Blapstinus pulverulentus*; 18, *Cicindela repanda*; 19, *Cicindela oregona*; 20, *Systena tæniata*; 21, *Agonoderus lineola*; 22, *Collops bipunctatus*; 23, *Hydrophilus triangularis*; 24, *Rhantus flavogriseus*.

W. C. WOOD.—13, *Amara chalcea*; 14, *Amara angustata*; 15, *Anisodactylus agilis*; 16, *Amara* sp.; 17, *Amara avida*; 18, *Bembidium contractum*; 19, *Bembidium affine*; 20, *Philonthus cyanipennis*.

RALPH HOPPING.—13, *Haltica ignita*; 14, *Cercyon hæmorrhoidale*; 16, *Podabrus rugulosus*; 17, *Photinus consanguineus*; 18, *Podabrus brunnicollis*; 19, *Berosus peregrinus*; 21, *Staphylinus* (damaged); 22, *Melanotus decumanus*; 24, *Platydema excavatum*.

## Entomological Literature.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, vol. xvii, 1890.—New species of American Cynipidæ, by H. F. Bassett. Notes on some North American Odonata, with descriptions of three new species, by P. P. Calvert. Notes on the species of *Dendroctonus* of Boreal America, by Dr. W. G. Dietz. A Synopsis of the Odonat genus *Leucorhinia* Britt., by Dr. H. A. Hagen. The species of *Heterocerus* of Boreal America; Notes on the species of *Ochthebius* of Boreal America; Notes on some Hydrobiini of Boreal America; A Revision of the Sphæridiini inhabiting Boreal America; Some notes on *Aræoschizus*; all by G. H. Horn, M.D. The Phycitidæ of North America, by Geo. D. Hulst. New North American Bees of the genera *Halictus* and *Prosopis*, by Charles Robertson Descriptions of some new species of *Agrotis* Auct; A contribution toward a knowledge of the Mouth-parts of the Diptera, by John B Smith

THE ENTOMOLOGIST, March, 1891.—Note on *Agrotis subgothica*, by J. Jenner Weir. Life-history of *Pachnobia leucographa*, by J. Arkle. Contributions to the Chemistry of Insect Colors, by F. H. Perry Coste. On the occasional abundance of certain species of Lepidoptera, by Robert Adkin. Lepidoptera found in Britain and America (List of), by Richard South. A Preliminary List of the Insect Fauna of Middlesex, by T. D. A. Cockerell. Entomological notes, captures, etc. Doings of Societies and Reviews.

BIOLOGIA CENTRALI-AMERICANA Part 90, December, 1890.—Arachnida-Araneidæ, by O. P. Cambridge (pp. 65–72). Coleoptera: vol. iv, pt. 2, by G. C. Chapman (pp. 249–266); vol. iv, pt. 2, by G. C. Champion (pp. 57–80, pl. 3; vol. vi, pt. 1, suppl. by M. Jacoby (pp. 225–232, pl. 40. Hymenoptera: vol. ii, by P. Cameron (pp. 121–128). Lepidoptera-Rhopalocera: vol. ii, by F. D. Godman and O. Salvin. Lepidoptera-Heterocera, by H. Druce (pp. 425–440, pl. 34).

ENTOMOLOGISCHE NACHRICHTEN, xvii, No. 1, January, 1891.—A new West African Fulgorid,* by Dr. F. Karsch, fig. A new Stratiomyid,* by C. Verhoeff. The genera *Lasiopsis*, *Asceptonycha* and *Lachnota* in the light of the dogma of priority, by L. Brenske. On the difference of colors in pupæ of *P. Machaon*, by E. Reuter. Ichneumonid studies,* by Dr. Kriechbaumer. New Sphingidæ from Africa,* by Dr. F. Karsch; *Rhadinopasa* n. gen. (a plate to follow). No. 2, January, 1891.—A contribution to the Coleopterous Fauna of the island of Norderney* and *Capsus capillaris* F., an enemy to Aphidæ, by C. Verhoeff. On the Odonat genus *Idionyx* Selys,* by Dr. F. Karsch.

ENTOMOLOGISK TIDSKRIFT, Arg. 11, Nos. 1, 2. [In Swedish] Stockholm, 1890. Scandinavian Trichoptera æquipalpina, by H. D. J. Wallengren. On Cicadariæ, morphological and systematic, by Dr. H. J. Hansen, two plates. Contributions to the knowledge of the geographical extension of the Swedish Macrolepidoptera, by J. Andersson. On Scandinavian species of Trichocera, by S. Lampa, etc.—No. 3, Entomological communications from Societas Pro Fauna et Flora Fennica, 1884–1889, by E. Reutter. The Lepidopterous Fauna of St. Hans Haugen, by J. S. Schneider —No. 4, Scandinavian Microlepidoptera (continued), by H. D. J. Wallengren. Contributions to the Norwegian Lepidopterous Fauna, by W. M. Schoyen. A new Dipter,* by O. Bidenkap. Abberrations in Lepidoptera, by E. Reuter. New Beetles from Africa,* by C. Aurivillius, etc.—No. 5, Bibliography of Scandinavian Insects, by J. Spangberg.

COMPTE-RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Jan. 10, '91. Description of Coleoptera from the interior of China,* by L. Fairmaire; *Toxocerus*, *Arrephora*, *Hexatænius*, *Colpotinus*, *Hexarhopalus*, n. gen. *Phytophaga* from Chota Nagpore,* by A. Duvivier; *Pseudadimonia* n. gen. Causeries Odonatologiques, No. 3., *Nesobasis* new subgenus of Agrionina by E. de Selys-Longchamps.

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* Contains new species other than North American.

**Biologisches Centralblatt** (Erlangen), xi, No. 1, Feb. 1, 1891.—Parthenogenesis in Ants by artificial temperature. The meaning of the antennæ in *Myrmedonia*. On the question of the hearing power of Ants; all by E. Wasman.

**Compte-Rendu. L'Academie des Sciences** (Paris), Feb. 2, 1891.—Locusts (*Acridium peregrinum* Oliv.) in the extreme south of Algeria and the locust-eating population, by J. Kunckel d'Herculais; refers to the devastations beginning in December, 1890.

## Doings of Societies.

Entomological Section of the Academy of Natural Sciences.—A meeting was held Feb. 26, 1891, Dr. Horn, director, presiding. Meeting called to order at 8.15 P.M. Members present: Martindale, Ridings and Skinner. Associates: Liebeck, Fox, Calvert. Dr. Horn exhibited drawings to illustrate *Cryptohypnus*, and also some new species intended for the Transactions. The head in *Epicauta* was shown, and also a drawing of an Elaterid supposed to be a *Cryptohypnus*. The species was sent to Dr. Candéze, inquiring as to what he thought its proper position. He was disposed to put it near *Colymbetes*. Dr. Horn considered it near *Cryptohypnus*. The characters of the species were discussed and their relations to allied genera dwelt on. An *Eleodes* was shown with curious modifications of the hind tibiæ. Mr. Philip Nell was proposed as an associate of the Section.

Henry Skinner.
*Recorder.*

## OBITUARY.

Edward Andre, F. E. S.—The French publications announce the death of this well-known Hymenopterist. His principal work was "Species des Hymenopteres d'Europe et d'Algeria," commenced in 1879 and continued until his death.

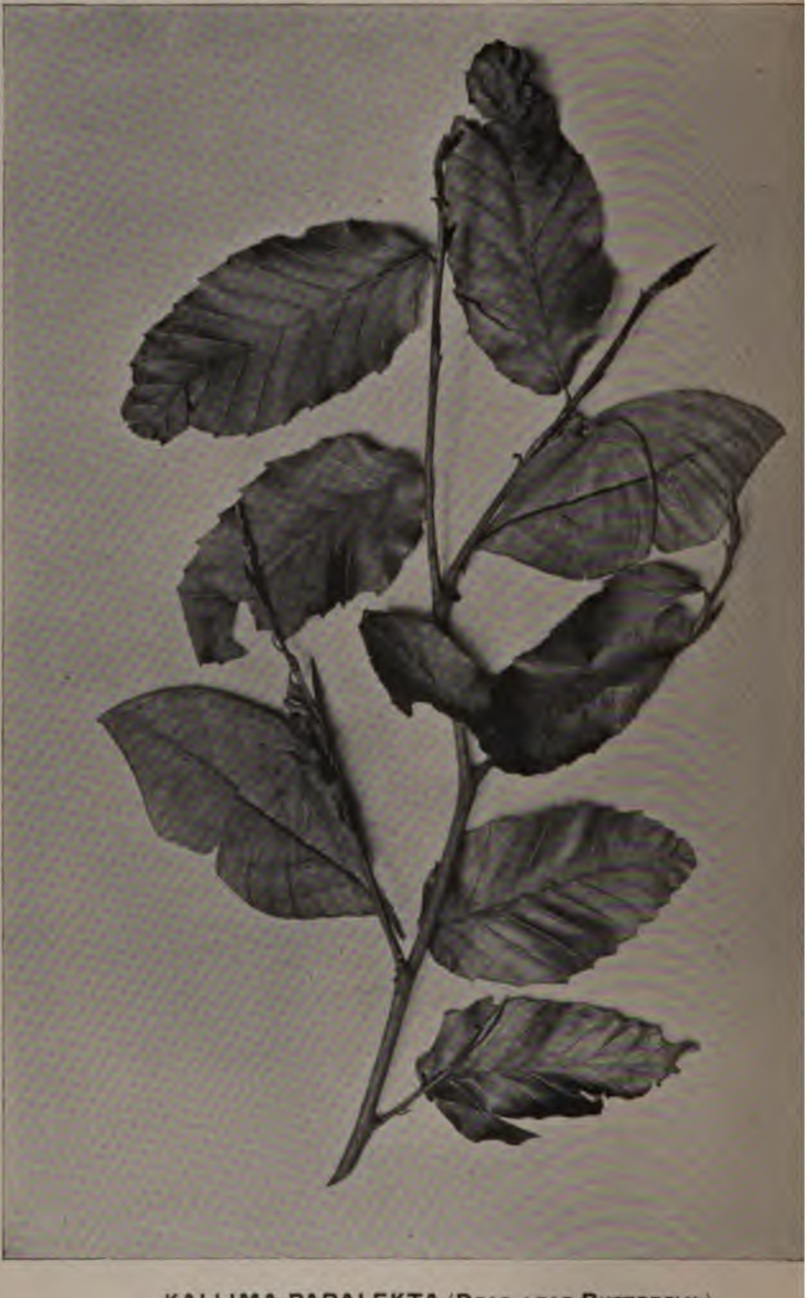
The death has been announced of Prof. Philipe Poey, the eminent Cuban naturalist and director of the Zoological Museum in Havana. He has done much good work in entomology.

Dr. S. S. Rathvon, of Lancaster, Pa., on March 19th, aged 79 years. He was a corresponding member of the Academy of Natural Sciences and American Entomological Society; also one of the founders of the Linnaean Society of Lancaster.

### Errata to Vol. II, No. 3.

Page 42, line 14 from top, for incurvation of inner eye, *read* inner eye margin.
Page 49, line 5 from bottom, for acpitis, *read* capitis.
Page 53, for urtioæ, *read* urticæ.
Page 54, line 18 from top, for cervical, *read* conical.

Entomological News for March was mailed February 28, 1891.



**KALLIMA PARALEKTA** (Dead-leaf Butterfly.)

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. MAY, 1891. No. 5.

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## Description of Plate V.

Plate V represents the so called protective mimicry of insects. The last few years much ink has been spilled in the discussion of this subject; some writers agreeing that it is undoubtedly protective mimicry and others only accidental resemblance. Drummond, in his work on "Tropical Africa," speaks as follows: "Carlyle, in his blackest visions of 'shams and humbugs' among human kind, never saw anything so finished in hypocrisy as the naturalist now finds in every tropical forest. There are to be seen creatures—not singly, but in tens of thousands—whose very appearance, down to the minutest spot and wrinkle, is an affront to truth; whose every attitude is a pose for a purpose, and whose whole life is a sustained lie. Before these masterpieces of deception the most ingenious human impositions are vulgar and transparent. Fraud is not only the great rule of life in a tropical forest, but the one condition of it."

We are indebted for the plate to the kindness of M. J. F. Sachse, editor of the "American Journal of Photography," who made the original photograph.

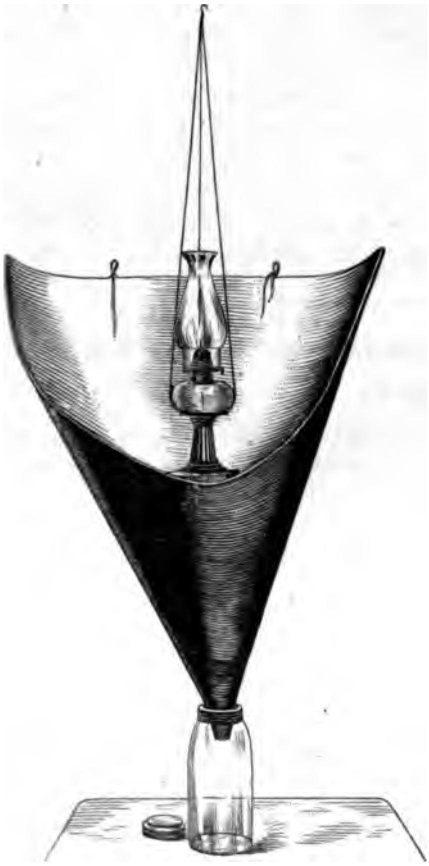
This species is mentioned by Wallace in his work on the Malay Archipelago in the following language: "Its upper surface is of a rich purple, variously tinged with ash color, and across the fore wings there is a broad bar of deep orange, so that when on the wing it is very conspicuous. This species was not uncommon in dry woods and thickets, and I often endeavored to capture it without success, for, after flying a short distance, it would enter a bush among dry or dead leaves and however carefully I crept up to the spot I could never discover it till it would suddenly start out again and then disappear in a similar place. At length I was fortunate enough to see the exact spot where the butterfly settled, and though I lost sight of it for some time, I at length discovered that it was close before my eyes, but that in its position of repose it so closely resembled a dead leaf attached to a twig as almost certainly to deceive the eye, even when gazing full upon it." I have noticed the following interesting quotation: "J. A. de Mandelsloe, who made a voyage to the East Indies in 1639, tells us that not far from the Fort of Ternate grows a certain shrub called by the Indians *Catopa*, from which falls a leaf, which, by degrees, is supposed to be metamorphosed into a butterfly." This was one hundred and ninety years before the butterfly was described by Horsfield.—ED.

## A TRAP FOR CAPTURING COLEOPTERA.

By T. B. ASHTON, Tonganoxie, Kansas.

A good method of capturing many valuable species of insects, for the purpose of enriching the cabinet of entomologists, is to make from builders' past-board a funnel two feet in diameter and three feet high, with the apex one and a half inches in diameter Eighteen inches from the top of the funnel and one third of its circumference in front should be cut out, leaving an opening. A wire should be fastened around all the rim to keep the funnel in proper shape Two loops should be made in the wire six inches each side of the centre of the top of the funnel to fasten it in position when in use. The seam in front of the funnel can be lapped and held together with glue. A coat of glue, or varnish should be spread over the inside of the funnel so as to render it more slippery to the feet of insects. The funnel may be of any diameter and made of tin, or any other suitable material, but paste-board answers the purpose, and is not expensive.

Procure a two-quart glass fruit-jar with an air-tight top and fasten in it at the bottom two ounces of Potassium cyanide, and place plenty of paper packing over it. Add a few drops of water to the packing to moisten the cyanide and then close the jar till wanted for use. With proper care the cyanide will retain its strength, and can be used during the collecting season.



The next part of the trap is a lamp that gives a bright light. A wire ring should clasp the lamp below the oil bowl. This ring should have three small wires fastened to it, equal distances apart, and extending upwards two feet and twisted together down to near the chimney and have a loop on the upper end to hang the lamp by when in use.

On a dark, still evening in the spring-time, when insects are on the wing, fasten the funnel to the side of a building, or some other suitable object, with its small end resting snugly in the mouth of the cyanide jar, and then suspend the lighted lamp in the funnel to shine forth from the front opening and let it remain there for a few hours, then close the jar till morning, and by the light of day open and spread its motionless and silent contents on some white paper, then the entomologist will enjoy a treat such as is seldom seen,—his eyes beholding beauties in many forms and so gaily colored, and then in such numbers, that his mind will be filled with wonder and delight. There will be many Lepidoptera and a few Neuroptera that will have all their beauty spoiled by friction with each other as they mix together in the fumes of the cyanide. A few Hymenoptera, Hemiptera and Orthoptera will be found in fair condition to claim attention. There will be Coleoptera represented by species in many families; some are large, others small, and many that are very minute, but all, with a little brushing, fit for a place and a name in a naturalist's cabinet.

For capturing Coleoptera that are attracted by light, I consider this the best trap that I have ever seen, and, while I claim to be the inventor of it, I do not intend to get it patented, and I invite all coleopterists to make use of it and do me the kindness to report their success or failure to the ENTOMOLOGICAL NEWS.

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# Notes on some Spiders described by Hentz.

By NATHAN BANKS, Washington, D. C.

Since Hentz published his papers on the spiders of the United States quite a number of his species have remained in obscurity. During the past season I have found a few not hitherto recorded, and decided that certain known species were synonymous with some of those described by Hentz. The following notes are on the above two classes of facts.

### MICROGNATHIDÆ.

**Thalamia parietalis** Hentz.

Two specimens of this peculiar and interesting spider were found in the corners of a room in Texas. The genus is close to *Œcobias*, but I can find only two tarsal claws. It may be related to *Omanus*.

### DRASSIDÆ.

**Trachelas tranquilla** Hentz.

*Clubiona tranquilla* Hentz ; *Trachelas ruber* Keys.

This spider is common through all the United States east of the Mississippi River, and I have specimens from Texas and Missouri [S. Van Ingen]. I think that there can be no doubt that this spider, several times described under the name of *T. ruber* Keys. is the *Clubiona tranquilla* Hentz.

## AGALENIDÆ.

**Dictyna sublata** Hentz.

*Theridion sublatum* Hentz; *Dictyna muraria* Em.

I see no reason why this synonymy is not perfectly clear. The species is found in Mississippi, and specimens vary to resemble Hentz's figure. *D. arundinaceoides* Keys. is perhaps the same species. As to Hentz's other *Dictyna* I am not sure what they are; *T. foliaceum* is perhaps *D. frondeum* Em.

## THERIDIDÆ.

**Linyphia conferta** Hentz.

Ithaca and Long Island.

**Bathyphantes anglicanum** Hentz.

*Theridion anglicanum* Hentz.

Two females and two males of this species were taken in Texas. The male is red like the female.

## EPEIRIDÆ.

**Epeira directa** Hentz.

Brazos County, Texas. They vary somewhat in markings, a central light stripe is frequently present on the abdomen and often each side of this a row of six black dots. On the venter there are two dark stripes which unite at the spinnerets and at the lung slits. It shows some approach to *Tetragnatha*.

**Epeira sanguinalis** Hentz.

This very delicate spider was found in the nest of a mud-wasp in Texas in September. The front legs are very spiny. The venter is white, except the black epigynum.

**Epeira scutulata** Hentz.

*E. punctillata* Keys.

One specimen (♂) of this species has been recorded from Illinois by Keyserling under the name of *Epeira punctillata*. I have found an adult ♀ in July on Long Island, N. Y. It was at the center of a vertical orb web in an evergreen tree. Young specimens were found in evergreen trees in December.

## THOMISIDÆ.

**Runcinia aleatorius** Hentz.

*Thomisus aleatorius* Hentz; *Runcinia brendelli* Keys.

Hentz described the ♂ of this species, and it seems that some arachnologists knew of the identity of the two species, yet the synonymy has not previously been given. Mississippi, Texas, Iowa.

## LYCOSIDÆ.

**Lycosa erratica** Hentz.

*Tarentula lepida* Keys.

This species is quite easily recognized by the form of the central dark stripe on the abdomen.

**Aulonia? funerea** Hentz.

*Lycosa funerea* Hentz.

Washington, D. C. Not uncommon. The abdominal markings do not quite agree with Hentz's figure, yet the specimens vary somewhat. Its position in *Aulonia* is very doubtful. It may form a new genus. The cephalothorax is full as high between the second and third pairs of legs as in the eye region.

**Dolomedes urinator** Hentz.

*D. lanceolatus* Hentz is the ♂ of this species.

**Dolomedes scriptus** Hentz.

*D. scapularis* Koch.?

What has been taken as *D. tenebrosus* Hentz is this species. What I feel sure is *D. scriptus* H. has the epigynum as figured by Emerton for *D. tenebrosus* and very similar to that of *D. scapularis* as figured by Keyserling. *D. tenebrosus* H. has a much broader epigynum and a broad septum, which does not, however, cover the cavity. It is also quite different in markings.

**Oxyopes salticus** Hentz.

*O. astutus* Hentz is the ♂ of this species.

## ATTIDÆ.

**Dendryphantes retarius** Hentz.

*Attus retarius* Hentz ♀; *Plexippus puerperus* Peck, not Hentz.

From D. C. southward to Texas. Peckham has wrongly determined this species. I see no reason why it is not a good *Dendryphantes*. *Attus sylvanus* Hentz is probably the ♂, as Peckham states, yet it may be another species.

**Dendryphantes nubilus** Hentz.

*Attus nubilus* Hentz.

This is perfectly distinct from *D. capitatus*. It is very variable in markings, some almost white; a small darker specimen may be distinct. Mississippi and Texas.

**Dendryphantes octavus** Hentz.
*Attus octavus* Hentz.

**Dendryphantes capitatus** (Hentz) Peck, not Hentz.
*Attus parvus* (Hentz) Peck, not Hentz; *Attus æstivalis* Peck.

The common spider described and figured by Hentz as *Attus octavus* is certainly not an *Eris*, and I have no doubt but that it is what has been described by Peckham as *Attus capitatus*, of which he makes *Attus parvus* the female. The latter is either an *Eris* or *Zygoballus*, probably the latter, and may even be *Z. bettinii* Peck. I see no reason for considering *Attus capitatus* Hentz as the male of what Peckham describes as such, the markings of the cephalothorax are certainly different, and the difference in size is enormous. Moreover, Hentz did not give *Attus parvus* as common, while he does state so of *Attus octavus*. Nearly all the specimens of this species which I have seen from the South appear as Hentz figures *Attus octavus*.

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# NOTES ON THE EARLIER STAGES OF LEPISESIA FLAVOFASCIATA Barnst.

By CARL BRAUN, Bangor, Me.

On Memorial Day 1888, at 4 P.M., when returning from a bog five miles distant from this city, where I had spent the day collecting *Chionobas jutta* and other rare lepidoptera, by the edge of a clump of woods near home, my attention was called to a bumble-bee-like creature which was fluttering among the violets just in blossom in order to obtain some honey as I thought. Its flight seemed to me peculiar, and by observing it closer I saw at once that it was not a large bee, but a small *Macroglossa*. Having my net at hand I caught it at once, and found, after bottling it, that it was a *L. flavofasciata*, which species I had often before admired in the collection of Prof. C. H. Fernald, then at the State College in Orono, Me. After the Insect had become quieted I took it from the bottle immediately and examining it closer found that it was a ♀. In the hope of obtaining ova from this exceedingly rare and desirable species, I quickly put it into a small paper-box with perforated bottom and glass top. These boxes I always carry with me on my collecting trips to keep females from which I desire to obtain ova. I carried the box carefully in my hand, and after a few minutes, to my great delight, it came to life again. When arriving at my home I put it into a larger paper box with gauze top fitted up for the purpose for females to lay their ova in. I at once procured a few fresh leaves of wild honeysuckle which, I believed at the time, to be the food-plant of this species, and coated several of them thinly with maple honey. I have always obtained from females of Sphingidæ in this manner more ova than without the food-plant. I change the leaves twice a day and keep the boxes in my breeding-house in a cool place. I have often watched *Sphinx kalmiæ* and *drupiferarum* when in a starving condition putting the proboscis out and sucking the honey from these coated leaves. This of course sustains life and helps them to lay all the eggs. On the other hand if not fed, fresh females of the flower-visiting Sphinges will in most every case, die of starvation before they have laid half their eggs. By examining the ovary after death I have generally found this to be the case. This by way of explanation. But to return to my ♀ *Lep. flavofasciata*, I watched it closely for two days, examining the box most every hour, without finding any ova. I had almost given-up hope of obtaining any; yet, to my great delight on Saturday morning, June 2d, I found four small grass-green globular eggs, two of which were attached to the bottom of the box and two glued to the stem of a leaf. I changed the leaves, putting the èggs carefully back into the box. That afternoon I found ten more eggs and next day twenty-two more. June 4th I counted fifty-seven ova. On the morning of June 5th I found the ♀ dead and no more eggs. I believed she had laid them all, and of course must have deposited ova before I had captured her; this latter proved to be a fact. The young larvæ hatched after five to six days; they would not eat the honeysuckle and I greatly feared losing them. In my anxiety I went to the place where I had taken the ♀ and found among other plants a species of *Epilobium*, and by cleansing the leaves I found to my great astonishment attached to the underside of one leaf two eggs of this same species. The female was evidently depositing eggs at the time I caught her; I had found the food plant without doubt, as the starving larvæ readily took to it and seemingly devoured with great appetite their well-known food. I am also quite sure I would have lost the young larvæ but for the honey on the leaves of the honeysuckle, which kept them alive. Here and there they had nipped a leaf on the edges and the light honey coating had disappeared. Of all the fifty-seven larvæ I only succeeded in bringing out nine to the pupal state, and the next season only five, three females and two males to the imago state, large full grown imagos, of which two pairs are in my collection. The imago of this insect has been described by Barnst, but the earlier stages according to Prof. Smith's book on the Sphingidæ are still unknown,

I have not much time for this work, and I had almost my mind made up to turn over my numerous notes on original work to somebody better fitted to the task, yet I will try to do the best I can if the editor of ENTOMOLOGICAL NEWS will allow me the space. The eggs, the four larval stages and the pupæ I will describe next month. I have given this introduction, as, I believe, it will be of interest to many of the readers. Next I shall attempt to describe the earlier stages of *Platarctia parthenos* and *Smerinthus cerisyi*, of which species I raise some every year. I have the eggs, the larvæ in all the stages in alcohol, and inflated, of these species.

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## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA.

Butterflies and moths, or LEPIDOPTERA (from the Greek, *lepis* a scale, and *pteron* wing), comprises those insects characterized by cylindrical, compact bodies, small head, mouth parts (in most species) developed for sucking, maxillæ prolonged into a tongue, mandibles obsolete, wings covered with minute scales, transformations complete. The word butterfly comes from the Anglo-saxon buttor-fleoge, or the resemblance of some common species (*Colias*) to butter in color. In German they are called schmetterlinge, from *schmetten*, cream. *Molken-dieb* (the whey-thief) is another name. The association with milk in its three forms—butter, cream and whey, is remarkable.

The order LEPIDOPTERA is separated into two grand divisions: RHOPALOCERA (from two Greek words, meaning knob and horn), butterflies or diurnals, and HETEROCERA (variable and horn), moths or nocturnals. The butterflies are thus separated from the moths by the structure of the antennæ or feelers. In the former being thread-like, with a little swelling or knob on the end, and in the moths a great variety of shapes other than this. In the Heterocera, or moths, they are filiform (thread-like), setiform (like a bristle), fusiform (tapering at each end), serrate (saw-like), pectinate (comb-like), filiciform (fern-like) and plumose (feather-like). There was formerly used another division of the moths called Crepuscular (from *creper* dark, dusky), or those that fly at dusk and in the early morning. The butterflies are further distinguished from the moths by their relatively smaller bodies in comparison to expanse of wings, less hairy character of thorax and abdomen, and when in repose they carry the wings erect; the chrysalids are naked and not buried in the earth, and the spiral tongue or haustellum, is long and well developed. Rhopalocera (butterflies, diurnals) are found all over the world from the frozen shores of the Arctic Ocean to the hot plains of Equatoria. They are always more abundant in the vicinity of water, and are always a welcome sight to the thirsty traveller.

Linnaeus included all butterflies in the genus *Papilio*. He was acquainted with about 760 species of moths and butterflies; they are now divided into well-defined families and numerous genera and species.

The food of butterflies consists principally of the sweet liquids drawn from flowers, which they reach by means of their long tongues.

The name butterfly suggests balmy Summer days, bright sunshine and green foliage. "On the side of a mountain as the sun was setting, throwing different portions into the shadow from the base to the top, the writer has seen the butterflies fly from cluster to cluster of flowers up the acclivity, going just fast enough to keep in the sunshine."* While this is true of butterflies as a whole, there are numerous exceptions. Some of the Satyridæ only fly in the densest woods, and others only at dawn and dusk of evening. "In Continental India, at Sangor, Capt. de la Chaumette describes *Melanitis leda* and an allied species as flying at sunset under the Neem trees, resting for a long time motionless on the ground and will not move until you almost tread upon them."

The species belonging to the MORPHINA have similar habits. Some of the Indian species remain motionless in repose all day, but when the sun is about to set they are to be seen everywhere, and are sometimes mistaken for bats. Every species has its own peculiar habits as to flight, time of appearance, method of egg deposition, etc. Some kinds wander from place to place and flower to flower, and others live their whole life in a very limited area. Butterflies often migrate in such numbers as to even obscure the sun. These congregations are usually made up of a single species. "A migration of butterflies was observed in Switzerland on the 10th of June, 1828: Madame de Meuron Wolff and her family established during the Summer in the district of Grandson, Canton de Vaud, perceived with surprise an immense flight of butterflies traversing the garden with great rapidity. They were all the species called Belle Dame by the French, and by the English, Painted Lady (*Vanessa cardui*). They were all flying close together in the same direction, from South to North, and were so little afraid when one approached that they turned not to the right or left. The flight continued for two hours without interruption, and the column was about ten or fifteen feet broad."

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* Prof. G. H. French, in "Butterflies of Eastern United States."

Mr. Charles J. Anderson encountered in Southwestern Africa, for two consecutive days, such immense myriads of lemon-colored butterflies, that the sound caused by their wings was such as to resemble "the distant murmuring of waves on the sea-shore." They always passed in the same direction as the wind blew, and, as numbers were constantly alighting on the flowers, their appearance at such times was not unlike "the falling of leaves before a gentle autumnal breeze." Moufet says: "Wert thou as strong as Milo or Hercules, and wert fenced or guarded about with an host of giants for force and valor, remember that such an army was put to the worst by an army of butterflies flying in troops in the air in the year 1104, and they hid the light of the sun like a cloud."—ED.

(To be continued.)

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

IT SEEMS foolish for a man to enter into an argument with a wasp. A wasp always carries his point.—*Yonkers Statesman.*

We have received a photograph of the rare moth *Erebus zenobia* caught in a woods near Tiffin, Ohio, October 20, 1890, at 10 P.M. It was taken at sugar by Mr. Lewis Ullrich. Mr. Ullrich says in regard to his capture: "I collected in this woods about three nights every week after July 10, 1890, in the same place where this was caught, but did not see this species until the night mentioned above."—Ed.

I have received through the kindness of Mr. J. T. Mason, of Houston, Tex., a moth probably not before recorded as belonging to our fauna. We are indebted to the industry of Mr. Mason for being able to add such a fine species to our lists. The only reference I can find to the species is in Vol. I. of Hübner's "Exotische Schmetterlinge," where it is beautifully figured under the name of *Diphthera festiva elegans*. Both the upper and undersides and both sexes are given. This is probably the moth Mr. Mason refers to in his note in Ent. News, Vol. II., p. 76, under the name of *Euglyphia harоglyphisa*.—Ed.

Fashion's new Fad.—Not content with her slaughter of the innocents in the matter of birds, Dame Fashion has extended her murderous designs to moths and butterflies. The gorgeous hues of the wings of some of these are deemed effective for dress decorations, and we are told that in Paris exquisite gauze ball toilets are "appropriately and fancifully strewn with natural butterflies." Fanciful, it is granted, but never appropriate. Butterflies appear also on fans, but here only the wings are used, with the body, antennæ and legs sketched in afterward by an artist. Beautiful effects are produced, it is said, by painting bunches of flowers on which the insects seem to hover. When it is reflected that a single gauze fan of the size now in vogue may hold a dozen or more butterflies or moths, it is easy to estimate in what enormous quantities these creatures must be taken to satisfy even a small demand. Truly a fashionable toilet is becoming a composite thing, with dead birds and butterflies, hair from Indian beggars, and Mexican bugs as jewelry, held by golden chains.

Ants as Surgeons.—Ants are terrible fighters. They have very powerful jaws, considering the size of their bodies, and, therefore, their method of fighting is by biting. They will bite one another, and hold on with a wonderful grip of the jaws, even after their legs have been bitten off by other ants. Sometimes six or eight ants will be clinging with a death grip to another, making a peculiar spectacle, some with a leg gone, and some with half the body gone. One singular fact is that the grip of an ant's jaw is retained even after the body has been bitten off and nothing but the head remains. This knowledge is possessed by a certain tribe of Indians in Brazil, who put the ants to a very peculiar use. When an Indian gets a gash cut in his hand, instead of having his hand sewed together, as physicians do in this country, he procures five or six large, black ants, and holding their heads near the gash, they bring their jaws together in biting the flesh, and thus pull the two sides of the gash together. Then the Indian pinches off the bodies of the ants and leaves their heads clinging to the gash, which is held together until the gash is perfectly healed.

MIMICRY of *Danais archippus* presented itself very strikingly early in September, 1889, while looking for *Catocala* in wood lot well cleared of undergrowth. It was in Astoria, Long Island, late in the afternoon when about to return home that I noticed many Danaidæ flying singly and in a restive way toward a circular clearing on edge of woods, and would invariably disappear in the foliage as I supposed it to be. I lingered there for half an hour and observed their coming in from meadows adjoining, and wondered why they were flying so high when they reached the timber line, and many passing out of sight at a particular spot of that circular clearing. I stationed myself closer and almost under overhanging branches of a Swamp Maple (*Acer rubrum*), on which I noticed an apparently dead or dying branch, having the red leaves of Autumn foliage thereon. It contrasted strangely with the verdure of other branches and trees of vicinity. I have seen such branches in August destroyed by the agency of Locusts (*Cicada septemdecim*) and much resembling that in question. Presently I observed a *Danaid* circling overhead for a few minutes, flying towards this branch and alighting on *underside* of one of its branchlets, then dropping and folding up its wings hurriedly. One more leaf had now been added, and the mimicry revealed to my senses. It was as perfect as it could be. Every *Danaid* hung or rested there limp and lifeless as it were, and not in the least disturbed by the jarring occasioned by subsequent arrivals of others. The lowest part of this dead limb, which it was, because devoid of any leaf, was twelve feet above ground, so that I could not reach it with my net. I calculated that from six to eight dozen *Danaids* were thereon. I tossed the net upward, shaking the limb when it came in contact with it, and the air seemed to be brilliant with fulvous tints of terrified butterflies. I subsequently revisited the spot twice during the following week, but failed to observe *Danaids* in same locality or tree.—RICHARD E. KUNZE, M.D., New York.

NOTES ON MT. DESERT DRAGONFLIES.—The following species of Odonata were taken during the Summer of 1890 on the island of Mt. Desert, Maine, and within a few miles of the village of Bar Harbor.

I am indebted to Mr. Philip P. Calvert, of Philadelphia, who has kindly identified the specimens for me. The notes on the colors of the eyes were made while the specimens were fresh and not yet faded.

### AGRIONINÆ.

*Argia violacea* Hag.—July 1st, ♂.

*Ischnura verticalis* Say.—Orange variety. June 25th, 1 ♀; eyes brown above.

*Enallagma Hageni* Walsh.—July 1st, 1 ♂.

### AESCHNINÆ.

*Neuræschna vinosa* Say.—July 25th, 1 ♂; eyes greenish, becoming brown above.

### CORDULINÆ.

*Cordulia semiaquea* Burm.—July, ♂ and ♀; eyes brown.

### LIBELLULINÆ.

*Libellula quadrimaculata* L.—June 28th, 1 ♂; eyes brown above, greenish bloew.

*Celithemis elisa* Hag.—June 28th, July 10th; several males and females; eyes chocolate-brown above.

*Nannothemis bella* Uhler.—July 1st, four females; eyes above brown, below gray, with a brown stripe down the centre.—DAVID JAYNE BULLOCK, Philadelphia, Pa.

NOTES ON THE LARVA OF *Catocala habilis*.—Last summer while searching for *Agrotis* under the loose bark of the hickory I was surprised to find many larvæ of the above named species. They are not gregarious, as I afterwards learned, while feeding them in confinement, but are eminently nocturnal and only feed by night and would naturally seek the shade and protection of the loose bark during the day. Every strip of bark sheltered more or less of them. They were made up of two broods. The larger ones were nearly full grown, while the smaller ones had hardly got through the second moult. The larvæ of this species are so discommoded by light that they seek the darkest corners of the rearing cage during the day, and at night if a strong light is brought to bear upon the bush while they are feeding, they will immediately stop and will not go on with the repast until it is removed. I do not know whether the larvæ of this species has been written up or not. I believe little is known about a majority of the larvæ of this genus, but venture to say this one resembles the larva of *C. Ultronia* in form, but is somewhat smaller and dark iron-gray variegated with small white spots. The last pair of pro legs are very much spread or technically speaking, divaricate. When about to transform to pupa they leave the bush and form a cocoon an inch or an inch and a half below the surface of the ground. In this respect they differ from others of the genus. The early brood came out winged flies the 15th of July and the others a month later.--R. BUNKER, Rochester, N. Y.

ON Saturday, April 5th, Mr. Wm. J. Fox, of the Academy of Natural Sciences of Philadelphia, and Mr. Charles W. Johnson, of the Wagner Institute of Philadelphia, sailed for Jamaica. They go solely for the purpose of studying and collecting the insect fauna of that island. They expect to be gone from six weeks to two months. ED.

THE LARVÆ of *Telea polyphemus* generally are not found in any great number on one and the same food plants. Late in August, or early in September, 1887, I took from three White Birches, none over fifteen feet high and growing so close together that branches intertwined, fifty-six of these larvæ, about half of full grown size. A number of other adult larvæ of same were collected from *Betula alba*, near by, on the bank of Harlem River, city of New York.—RICHARD E. KUNZE, M. D., New York.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st. The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d. Each specimen must have a number attached so that the identification may be announced accordingly. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

Insects have been named for E. Wilkinson, C. W. Chamberlain, Daniel G. Cox, W. E. Longley, B. F. Goss.

## Entomological Literature.

GARDEN AND FOREST, vol. iv, No. 158, p. 99.—An insect pest of Cattleyas (*Isosoma archidearum*). A fig. of the insect with larva and pupa.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, March, 1891.—A fortnight in Algeria, with descriptions of new Lepidoptera (concluded), by E. Meyrick. Holiday captures of Lepidoptera in Switzerland in 1886, by G. T. Baker. Notes on some British and Exotic Coccidæ (No. 19), by J. W. Douglas. On the new Australian Vine Pest, by Dr. E. Bergroth. On two new species of *Heteromera* from Japan, by George Lewis. *Cryptohypnus dermestoides* and its allies, by Geo. H. Horn, M.D. Description of the larva of *Hypena rostralis*, by S. T. Porritt. *Sphinx pinastri* as a British insect, Eds. *Plusia moneta* F. in France, Id. *Acidalia immorta*, by Rev. J. Greene. Coleoptera and Lepidoptera at Bundoran Island, by Rev. W. F. Johnson. *Hydroporus septentrionalis* and other Coleoptera in the Plymouth District, by James H. Keys. A query as to the food of certain Dipterous larvæ in nests of Vespidæ, by R. Newstead. Scarcity of Aculeate Hymenoptera in South Devon, by G. A. J. Rothney. Aculeate Hymenoptera in Wiltshire, 1890, by R. C. L. Perkins.—April, 1891.—Annotated List of the British Tachiniidæ (continued), by R. H. Meade. Notes on some British and Exotic Coccidæ (No. 20), by J. W. Douglas. *Micropteryx sangii*, a new species from birch, by J. H. Wood. On the erroneous inclusion of *Catoptria* (*Grapholitha*) *decolorana* Fr. in the British fauna, by C. G. Barrett. *Pempelia adelphella* id. Description of a new species of *Anaspis* from Scotland, with remarks, by G. C. Champion. On two new species of Mexican Histeridæ, by G. Lewis. Wiener Entomologischen Verein, Eds. A means of preserving collections in dry, hot countries, id. Newspaper entomology. Coleoptera at Church Stretton, by W. G. Blatch. *Odontæus mobilicornis* at Wellington College, by E. F. Elton. On the occasional development of wings in species of Hemiptera, usually Micropterous or Apterous, by J. W. Douglas. *Hepialus velleda* in abundance in Somerset, by C. G. Barrett. *Hesperia lineola* in Somerset, id. A black variety of *Phigalia pilosaria* at Gainsborough, by Rev. Canon Fowler. Note concerning *Pseudomacromia elegans* and *pretiosa* Karsch., by R. McLachlan. *Anthophora pilipes* at

Ilfracombe, by E. Saunders. Note on some Irish Trichoptera, by J. J. F. X. King.

**Lepidoptera Indica.** By F. Moore.—We have seen the first five parts of this grand work, and the first thing noticed was that the names of the species figured were not on the plate, but were referred to the text by numbers. This impairs the value of the work very much, and is an endless nuisance to the working lepidoptertst. This great fault also occurred in Rhopalocera Malayana. We can't understand why practical entomologists, who get out works, make this mistake. To see how this should be done we refer to the "Biologia Centrali-Americana" and the works of Staudinger, Romanoff, Saalmüller, etc. Thus far forty fine colored plates have been published illustrating the subfamily Euplœinæ, in which the author includes the old genera *Hestia*, *Danais*, *Euplœa*, divided into a great many new ones. This will be an exceedingly valuable work to those seeking an aid to identification.

**Oregon Agricultural Experiment Station,** Bulletin No. 10.—Experiments with the Codling Moth and with a combined Fungicide and Insecticide. The Hop Louse; Life-history, Prevention, Remedies, etc., by F. L. Washburn, entomologist.

**Delaware College Agricultural Experiment Station,** Bulletin No. 12.—Injurious insects and insecticides. The following insects are considered: Black Peach Aphis, Spring Canker Worm, Rose Chafer, Harlequin Cabbage Bug, Cut Worms, Angoumois Moth, Flea Beetles.

**Proceedings of the Entomological Society of Washington,** vol. ii, No. 1.—List of members. Nathan Banks: On *Thalamia parietalis* Hentz. Otto Heidemann: Note on the occurrence of a rare Capsid near Washington, D. C. L. O. Howard: The habits of *Eurytoma*, a new remarkable genus of Encyrtinæ; The habits of *Pachyneuron;* The parasites of the Hemerobiinæ. C. L. Marlatt: The *Xanthium trypeata*, *Trypeata æqualis* Lw.; Observations on the habits of *Vespa;* Notes on the genus *Metopius*, with description of a new species and table of species; The final moulting of Tenthredinid larvæ. Geo. Marx: A contribution to the knowledge of North American spiders; On the effect of poison of *Lathrodectus mactans* Walck. upon warm-blooded animals. C. V. Riley: Notes on the larva of *Platypsyllus;* On the difficulty of dealing with *Lachnosterna;* A viviparous cockroach; On the time of transformation in the genus *Lachnosterna*. E. A. Schwarz: Annual address of the president, North American publications on entomology; A list of the blind, or nearly eyeless Coleoptera hitherto found in North America; Labeling specimens; Note on the food-habits of *Xyleborus tachygraphus* and *X. dispar;* Coleoptera on the Black Locust; Notes on the breeding habits of some *Scolytids;* Contribution to the life-history of *Corthylus punctatissimus* and description of *C. spinifer* n. sp.; Feeding habit of a species of Empidæ. C. H. Townsend: Hemiptera collected in southern Michigan; The North American genera of Calyptrate Muscidæ; Note on the genera *Triptotricha* Lw. and *Agnotomyia* Will.; Notes on the North American Tachinidæ sens. lat. with descriptions of new species. P. R. Uhler: Observations on some remarkable forms of Capsidæ.

THE TERTIARY INSECTS OF NORTH AMERICA by Samuel H. Scudder, being vol. xiii, Hayden U. S. Geological Survey of the Territories; 663 pages, 28 plates, with many figures. Mr. Scudder states that this grand work was commenced more than a dozen years ago. The Myriapoda and Arachnides are treated of in conjunction with the various orders of insects. Such works as this mark eras in the studies of which they treat.

ENTOMOLOGISCHE NACHRICHTEN, xvii, No. 3, February, 1891.—Miscellanea Coleopterologica, by C. Schaufuss; *Chevrolatia Grouvellei*, Mexico, n. sp. Tryphonid studies,* by Dr. Kriechbaumer.—No. 4, February, 1891.—On the life-history of *Theridium sisyphium* Clerk., and on *Hemiteles sisyphii* n. sp.* ♂♀, by C. Verhoeff. *Rhizotrogus limbatipennis* Villa, an attempt to distinguish this species,* by E. Brenske. The Libellulid genera *Orthetrum* Newm. (*Libella* Brauer) and *Thermorthemis* Kirby,* by Dr. F. Karsch.

LE NATURALISTE CANADIEN, February, 1891.—Entomological Notes: Descriptions of new species, by J. Hausen; on Coleoptera, *Pterostichus* (*Dysidius*) *pulvinatus*, sp. nov., northern Vermont.

ZOOLOGISCHER ANZEIGER, Feb. 16, 1891.—Note on the musculature of the halteres, by R. v. Lendenfeld.

NOTES FROM THE LEYDEN MUSEUM, xii, No. 3, July, 1890.—Note on *Tyana superba* Moore, by P. C. T. Snellen. On *Cyriocrates zonotor* Thoms., by C. Ritsema. Descriptions of new Coleoptera of the family Eumolpidæ,* by E. Lefevre. Description of a new species of the genus *Ectatorhinus* (Coleoptera: fam. Curculionidæ*), by W. Roelofs.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Feb. 7, 891.—Descriptions of new Hesperidæ, 1st part, by P. Mabille; contains large number of new species from all parts of the world, including *Leuochitonea fuscescens*, Honduras, *Antigonus cupreiceps*, Honduras, *Achlydes halidus*, Merida, *Narga scopas*, id., *Butleria polydesma*, id., *B. quadistriga*, id., *Cecropterus Dhega*, Jalapa, *Proteides hondurensis* Honduras, *midia* Merida, from North America, and the following new genera: *pe*, *Hypoleucis*, *Narga*, *Eretis*, *Toxidia*. Descriptions of Coleoptera om the mountains of Kashmir,* by L. Fairmaire; *Blapidurus*, *Botiras*, gen.

LE NATURALISTE (Paris), 1 Mars, 1891.—The Acarinæ of plants, their atomie, Menegaux. Diagnosis of a new Lepidopter,* P. Dognin.

DIE VERWANDSCHAFT ZWISCHEN DER NOCTUIDEN-FAUNA VON NORD ERIKA UND EUROPA [von] Herr Aug. R. Grote (extract from "Verdlungen der Gesellschaft Deutscher Naturforscher und Arzte," Bremen, o, 7 pages.

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* Contains new species other than North American.

Entomologische Nachrichten, xvii, No. 5, March, 1891.—Review of the Odonata collected by Dr. Paul Preuss in German West Africa in 1890,* Dr. F. Karsch; *Mesocnemis*, *Hadrothemis*, *Archiclops*, n. gen.

Biologisches Centralblatt, xi, No. 3, Mar. 1891.—From insect life, Maria Grafin Linden; on some larvæ of *Phryganea striata*.

Le Naturaliste Canadien, March, 1891.—Entomological notes, J. Hausen; *Platynus* (*Anchomenus*) *testaceonotus* n. sp., Ste. Rose, Quebec.

Bulletin de la Societe Zoologique de France, xv, No. 7, July, 1890.—Note on the parasitic fly of the potherbs of the genus *Allium*, X. Raspail; *Musca alliorum* = *brassicaria* L?

Le Naturaliste (Paris), Mar. 15, 1891.—Diagnoses of new microlepidoptera,* P. Chretien.

Bulletin de la Societe d'Etudes Scientifiques d'Angers, Nouvelle Serie, xix annee, 1889; Angers, 1890.—Catalogue of the Coleoptera of Maine-et-Loire, part 3, J. Gallois.

Memoires de la Societe des Sciences Naturelles et Archeologiques de la Creuse, vi, Gueret, 1890.—[Habits of] the Psyllidæ. E. Pissot.

Association Francaise pour l'Avancement des Sciences, 18me Session; 2d part, Notes and memoirs, Paris, 1890.—Fossil insects of Aix, H. Nicolas. Hymenoptera of the south of France—the genus *Osmia*, H. Nicolas. On the distribution of the organs of taste in insects, A. S. Packard.

Societe Linneenne du Nord de la France, No. 213, March, 1890.—Observations on the parasites of *Liparis salicis* Dup., L. Carpentier. No. 215, May, 1890.—Materials for the catalogue of Orthoptera of the Somme, M. Dubois.

L'Entomologiste Genevois, 1re Annee; 11e and 12e livraisons, Dec. 15, 1890.—Monographic essay of the European species and those of neighboring countries of Phalacridæ. Enumeration of the European and Circumeuropean species of Hydronomidæ.* Studies on some Pompilidæ of Europe and neighboring countries. New Hymenoptera.* Materials for the Swiss Dipterous Fauna; all by H. Tournier.

Horæ Societatis Entomologicæ Rossicæ, t. xxiv, St. Petersburg, 1890.—Insects lately collected by G. N. Potanin in China and Mongolia: VII. Buprestidæ, Œdemeridæ, Cerambycidæ,* L. Gangelbauer; *Gaurotina*, *Ischnorrhabda*, *Morimospasma*, n. gen. X. Coleoptera (*Neodorcadion* and *Compsodorcadion*)* and XI. *Cymindis*, *Pseudopelta*, *Lethrus*,* B. E. Jakowleff. XIV. Hymenoptera Aculeata,* Dr. F. Morawitz. XV. Curculionidæ,* J. Faust; *Lechrioderus*, *Rhinodontus*, *Derelobus*, n. gen. XVI. Chrysomelidæ and Coccinellidæ (appendix),* J. Weise; *Phola* n. gen. XVII. Hemiptera-Heteroptera,* B. E. Jakowleff.—Insects lately collected in Central Asia on the journey of N. Przewalski. XVI. Hemiptera-Heteroptera,* B. E. Jakowleff. XVII. Formicidæ from Thibet,* G. Mayr. Turanian Cicindelids, A. Wilkins, 2 plates. Aralo-Caspian Coleopterous Fauna. XIII. Meloidæ and Cantharidæ,* W. Dokhtouroff, 1 plate. Diagnoses of new Coleoptera from central and eastern Asia,* A. Semenow, nine new genera. New and known Histeridæ from European and Asiatic Russia, J. Schmidt; *Dendrophilopsis* n. gen. Some words on *Cychrus* from the Caucasus, A. Starck. Hymenoptera of Korea,* C. Radoszkowski. Proposal of a new method of preserving collections of insects against the attacks of their enemies, A. Wilkins. Addition to my works on the genus *Aricia* s. lat , J. Schnabl. Contribution to the knowledge of the genus *Psalidium* Illig.,* J. Faust. On the Hemipterous Fauna of Russia and the surrounding countries,* B. E. Jakowleff; *Periphima*, *Mimula*, n. gen. On the biology and systematic position of the genus *Chermes* L., N. Cholodkowsky, figs. Essential characters of some genera and subgenera of Anthomyidæ, J. Schnabl. Hymenoptera collected on Mt. Ararat,* Gen. C. Radoszkowski, figs. On the Thelyphonidæ in the collections of some Russian museums, J. Tarnani, 1 plate. Notice on *Lethrus* Scop.,* B. E. Jakowleff; *Abrognathus*, *Heteroplistodus*, n. gen. New Trans-Caspian Fossorial Hymenoptera,* Dr. F. Morawitz.

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* Contains new species other than North American.

BULLETIN DE LA SOCIETE IMPERIALE DES NATURALISTES DE MOSCOW, 1890, No. 2. [On Rhopalocera], 1 plate. *Tomicus Judeichii* Kirsch, T. Teplouchow.

TRAVAUX DE LA SOCIETE DES NATURALISTES A L'UNIVERSITE IMPERIALE DE KHARKOW, t. xxiii, 1890 (in Russian).—Notes on the histological structure of the digestive apparatus of the Myriapoda, N. Bielooussow. Description of some species of the genus *Rhyssa* Grh. of the fauna of the government of Kharkow, W. A. Jarochewsky.

VERHANDLUNGEN K. K. ZOOL.-BOT. GESELLSCHAFT IN WIEN, xl. Bd., III. Quart, 1890.—On the stronghold of *Hypoderma lineata* Villers from [the researches of] Dr. Adam Handlirsch, and other researches and observations on Œstridæ, Dr. F. Brauer, figs. *Cecidomyia pseudococcus* Thomas, E. H. Rubsaamen. Larva and manner of living of *C. pseudococcus* n. sp., Dr. F. Thomas.—IV. Quart, 1890.—Identification table of the Heteroceri (Coleoptera) of Europe and the neighboring districts as far as known,* A. Kuwert, figs.

ENTOMOLOGISCHE NACHRICHTEN, xviii, No. 6, March, 1891.—Diptera collected on the island of Zante by Dr. O. Schmiedeknecht, V. v. Roder. New Chilian species of Vespidæ,* A. Schletterer.

## Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES.—A regular stated meeting was held March 26, 1891, Dr. Horn, Director, in the chair. Members present: Matindale, Laurent, Welles and Skinner.

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* Contains new species other than North American.

Associates: Fox, Calvert, Liebeck, Dr. Castle. Visitors: Mr. Nell and Mr. Boerner. The following papers were presented for publication in the Trans. Am. Ent. Soc.: Notes on some *Noctuidæ*, with descriptions of new genera and species, by John B. Smith. On the species of *Trypoxylon*, inhabiting America, North of Mexico, by Wm. J. Fox. Catalogue of the described species of South American *Asilidæ*, by S. W. Williston. A revision of the species of *Euclea*, *Parasa* and *Packardia*, with notes on *Monoleuca* and *Varina ornata* Neum., by H. G. Dyar. Dr. Horn spoke of the importance of those members interested in Coleoptera, collecting *Agrilus*. He had noticed that those inhabiting the United States North of Mexico formed a group peculiar to themselves. There appears to be a series of species in each group, that are parallel to series of other groups. Mr. Martindale mentioned the emergence from the chrysalis of a specimen of *Papilio asterias*. Mr. Welles had found a specimen of *Scoliopteryx libatrix* on the 24th of the month; he did not know whether it hibernated or not. Dr. Horn placed on record the finding of *Bembidium lampros* Herbst. at Cambridge, Mass., and in Michigan by Mr. Schwarz, and at Ottawa, Canada, by Mr. Harrington. The determinations were made by Mr. H. W. Bates, to whom specimens were sent. Mr. Calvert presented a blue-print copy of a manuscript Check-List of the *Odonata* of North America (including Central America and the West Indies), which he had compiled for private use. He stated that according to this list the number of genera and species in the United States was 56 and 240 respectively; that of these there were either in the collection of the Am. Ent. Soc., or in his own collection, American specimens of 53 genera and 159 species, and that two of the remaining genera were represented by European specimens. In but one of the subfamilies were there less than 65 per cent. of the species represented, and that was the *Gomphina*, where, out of fifty species, but 16 were represented. The above figures did not include a number of undescribed species in both the collections. Mr. Martindale exhibited a photograph of the rare moth *Erebus zenobia*, the original of which was captured by Mr. Lewis Ullrich at Tiffin, Ohio. Mr. Laurent reported once having seen a specimen of *Anthocharis genutia* flying in the streets of the city. The Section decided to take part in the annual meet of entomological societies to be held July 4th next. Mr. Philip Nell was elected an associate.

HENRY SKINNER, *Recorder*.

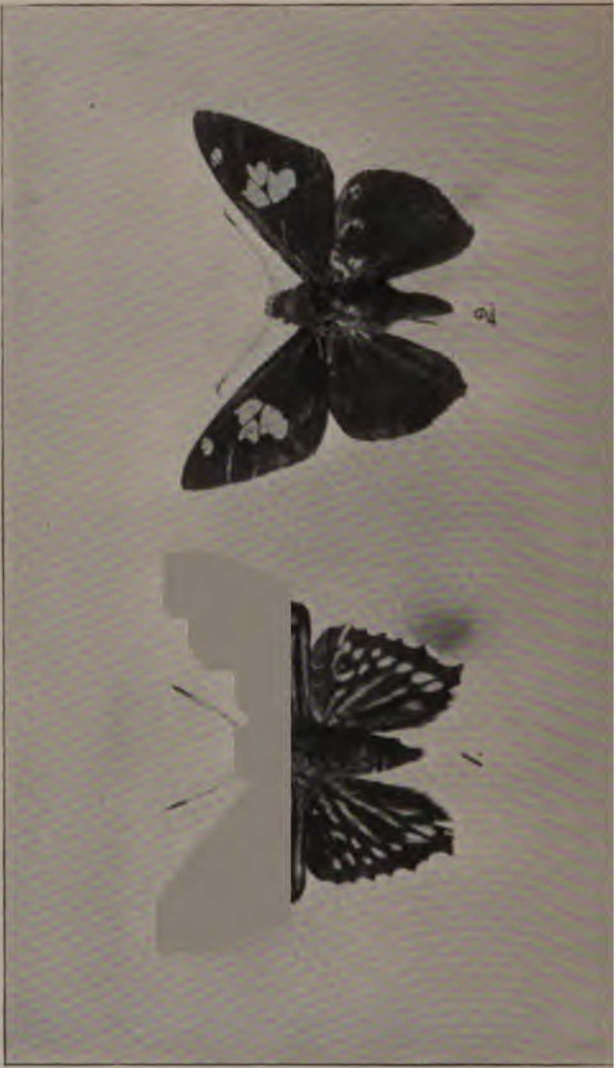
## OBITUARY

Dr. J. M. J. af Tengstrom, author of a work on the MICRO-LEPIDOPTERA of Finland, died Dec. 26, 1890, aged 69.

Errata to Vol. II, No. 4.

Page 80, line 18 from top, for *Colymbetes* read *Corymbites*.

ENTOMOLOGICAL NEWS for April was mailed March 28, 1891.



# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. JUNE, 1891. No. 6.

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The illustration this month represents two rare Hesperids, which were described in Vol. I, p. 23, of ENTOMOLOGICAL NEWS. Owing to circumstances the figures could not be given sooner. The plate represents the so called half-tone process of photo-engraving invented by Mr. Ives, of this city. The plate was made by the Crosscup & West Company of 911 Filbert Street, Philadelphia. In previous issues we have presented a number of plates made by the Crosscup & West Company, and it can be readily seen how well adapted the method is for illustrating objects in this branch of natural history. Perhaps the greatest advantage of the method is its comparative cheapness. The older plan of lithography is an excellent one, but it is a luxury that can only be enjoyed by the wealthy, as it necessitates the employment of an artist to make the drawings, and a lithographer to do the lithographic work and printing, all of which are expensive. A plate by the Ives process can be made from a good photographic print of the object, but it is best to have it made from the negative when possible. If the photograph is made on one of the new orthochromatic dry plates, the true color values of the object will be obtained. One of the great drawbacks to the study of Entomology in this country is the paucity of illustrations. Now that good mechanical processes of illustration are a success, we hope to see tiresome descriptions supplemented by good illustrations. Pl. IV, Vol. II, was made by the Crosscup & West Company from an ordinary negative (not orthochromatic), and the species are readily recognized. This plate would have cost at least five times as much by lithography. There will, undoubtedly, be improvements made in this line, and we look forward to a great future for Entomology illustrated.

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# NEW LEPIDOPTERA.

By A. G. Weeks, Jr., Boston.

**Hypolycæna festata** n. sp.

*Hab.*—Lower California (San José del Cabo). Expanse, ♂ and ♀, 1.00 to 1.10 inches.

*Male.*—Front and summit of head covered with light gray, nearly white hairs, deepening in shade as they approach thorax. Antennæ blackish, with white annulations at the base of each joint; club blackish brown, tipped with orange at base, the white extends nearly half way to apex. Thorax above presents generally the same color as wings, and is covered with grayish hairs; beneath it is almost pure white. Legs covered with white hairs, shading into gray at ends. Abdomen above same color as wings, the blue disappearing towards end, where it is replaced by deepening gray, underneath white, shading into yellowish gray at end.

Upperside of fore-wings a deep rich purplish blue, with some lustre; a large discoidal spot of the original ground color not inclining to blackish, the base very slightly dusted with blackish gray scales; the costa edged with blackish gray, at most linear over discoidal cell, and broadening towards apex, then extending down hind margin, of varying width, and covering one-third of marginal area; inner margin without any border Hind wings: ground color same as fore-wings; inner margin light gray, costa and hind margin with a linear edge of blackish gray, inside of which, on the hind margin, is a fine thread like line of white, broadening somewhat towards anal angle; inside of this is an almost imperceptible shading of dark blackish gray, bordering the ground color; two thread-like tails from termination of submedian nervure and first median nervule, the former more than thrice the length of the latter, blackish gray, very slightly edged and tipped with white; between these tails the dark shading inside of white line, broadens into a dark spot, and this broadening is repeated below the submedian nervure, but in less degree; at anal angle is an orange spot of small size, bordered at top with white, and bearing a few light blue scales at lower edge

Beneath both wings are light gray with slight intermingling of whitish scales, and near base a slight shading of darker gray, which latter is wanting in some specimens. The costa of the fore-wing is edged with orange near base, about one-quarter the distance to apex; edge of hind margin with a delicate line of dark brownish gray; the dark edging which appears on upper side and occupies one-third of marginal area, manifests itself underneath by a very slight yellowish tinge, scarcely perceptible on the gray back-ground ; on the inner edge of this, one-sixteenth inch from margin, is a transverse stripe of darkish gray elongated streaks extending from the costal border to the lower median nervule, bordered on each side with lighter gray, and always very indistinct, imperceptible on some specimens; inside of these and one-third the distance from margin to base is a series of more or less distinct transverse streaks extending from costa to lower median nervule, bordered with white or very light gray on the outside, and with orange on the inside, the orange being nearly absent at upper part near costa, but becoming more prominent below; this line is the prominent feature of the markings; within this and parallel to it is a line of very indistinct darkish transverse streaks extending to inner margin. On the edge of hind margin of hind wing is a delicate line of dark brownish gray, bordered on inner side with white, or very light gray; within this and one-sixteenth inch from margin is a line of nearly semicircular darkish gray lines extending from costa to inner margin, occasionally with a few orange scales enclosed and bordered with a little lightish gray; in the middle of the outer two-thirds of the wing is an irregular, but nearly straight series of transverse streaks of dark gray, forming a continuance of the streaks on fore-wing, but more strongly bordered with orange on inner side and white on outer side, and running parallel to the margin and terminating at inner margin about one-third the distance from anal angle to base; in the lower median interspace is a prominent orange spot, bordered above with a black line and enclosing at its base a nearly circular black spot, almost touching hind margin; in the next space below is a similar orange and black spot, less than half the size of the first and less distinctly marked, extending over the nervure to the anal angle; between these spots there is a sprinkling of light bluish scales, sometimes absent.

*Female.*—Head, antennæ and legs, same as male. Thorax and abdomen the same, except the blue of the male is replaced by the ground color of the wings. Ground color of wings a light grayish blue, near light slate color; some specimens being brighter and with considerable lustre; markings the same as male, except that the discoidal spot is wanting (although slightly apparent on some specimens), and the border of blackish gray on fore-wings, especially on hind margins, is more suffused, and covers one-half the area of the wing, extending from lower angle to a point on costa midway between apex and base. Beneath identical with ♂.

The specimens described were taken near San José del Cabo, at extreme end of the cape, in the month of August. They were flitting about the flowering vines near sea-level. Described from sixteen males and seven females in my collection; taken by Mr. M. Abbot Frazar in 1888.

**Lemonias maxima** n. sp.

*Hab.*—Lower California. Expanse, 1.60 inches.

Front of head covered with white hairs, shading into blackish brown at summit; between head and thorax a "collar" of fulvous hairs. Palpi white, shading into blackish brown at ends. Antennæ blackish, with white annulations at base of each joint; club blackish, tipped with fulvous. Thorax above black, covered with blackish brown hairs; beneath white. Abdomen the same as thorax.

*Fore-wings* above fulvous and dark brown, with white spots; margins dark brown. Costa dark brown, with a linear fulvous dash near base. The dark brown along hind margins covers marginal area; near hind margin a row of seven white spots in interspaces, the upper two elongated, and all bordered with a soft dash of blackish brown on basal and outer sides, more apparent on basal side. Within these, and one-third distance from margin to base, a second row of seven white spots, larger than the first and cone-shaped (apex outward), bordered with black on basal side only, arranged, the upper three in a line at right angle to costa, the next three at right angle with inner margin and the lower one not in line, but placed nearer hind margin; the upper three are placed in the dark brown of marginal area, the lower four in the fulvous ground color. Above this row and nearly in costal edge, is a small white speck; at the end of cell a large white spot edged on each side with black; below this, extending from median nervule to submedian nervure, another large white spot, bordered with black on basal side only and irregular in shape; between these two, in notch formed by junction of median nervule and median nervure, a small blackish brown spot. In center of cell a round white spot bordered with black, and below this, below nervure, another white spot bordered with black; between these and base two slight dashes of white; nervures and nervules dark brown. Hind wings are marked the same, except that in second row of white spots the second two are much elongated, with basal ends joining and forming a V; also, on the costa over center of cell, a larger elongated white spot with no border.

Wings *beneath* much the same as above, except general coloring is much lighter and brighter and some lustre. Costa of fore-wings edged with white near base, broader at base, and tapering off to a point half way up the wing. White spots more suffused; these forming the V on the upper side of hind wings, blended in one irregular spot, and elongated or suffused enough to join with white spot in cell. Base of hind wings, and inner margin of same, generously dashed with silvery scales.

Described from two specimens in my collection, taken near San José del Cabo, Lower California, by Mr. M. Abbot Frazar.

# A Remarkable new Hippoboscid from Mexico.

By C. H. TYLER TOWNSEND, Las Cruces, N. M.

[Read before the Entomological Society of Washington, Feb. 5, 1891.]

Recently Dr. Alfredo Duges, of Guanajuato, Mexico, sent me a unique of a species of Hippoboscidæ, with the request that I describe it. It had been taken on a bat, *Glossophaga soricina*, and was labeled *Trichobius* sp. This genus is queried in Scudder's "Nomenclator," being followed by the authority Gervais, also queried, the information having apparently been furnished by Mr. Bigot. I have searched in vain for any description or any mention of this genus in literature, except the remark by Mr. Bigot that he does not know the genus (Ann. Soc. Ent. Fr. 1885, p. 228), and I am forced to the conclusion that it has never been described, but is perhaps merely a name that has been perpetuated by labels in collections.

The above specimen has much the general appearance of *Strebla*, according to Wiedemann's and Macquart's figures of *S. vespertilionis*, and its similar habit would point to a near relationship with that genus. However, on Bigot's authority, *Strebla* has the claws of the tarsi simple, while our specimen has them bidentate, and further differs in having the first joint of all the tarsi very short, not elongate, not distinctly longer than the three following joints. Loew considered *Strebla* to belong to the Nycteribidæ on account of the first joint of the tarsi being elongate. The above specimen, moreover, has the eyes situated farther forward, near the middle of the head, instead of on the outer posterior angles. Yet, after all these differences, the venation agrees almost exactly with *Strebla*. If we consider with Loew that the latter genus belongs with the Nycteribidæ, then the present specimen is the first Hippoboscid known to be parasitic on bats. I am inclined to believe, however, that *Strebla* should, from its flattened head and the presence of wings, be included with the Hippoboscidæ, in spite of the fact that it is parasitic on bats. In this connection *S. avium* Macq., said by Loew to be synonymous with *S. vespertilionis*, is recorded as parasitic on pigeons and parrots in San Domingo. It is possible that this synonymy is in error, as the difference in habit would indicate two distinct forms. If such is the case, it might favor the separation of *Strebla* and allied genera, with *Trichobius*, under the family name Streblidæ, as already adopted by some authors.

However this may be, our specimen is remarkable as an undescribed form parasitic on bats, and in spite of differential characters, being probably nearly related to *Strebla*. As I can find no description of the genus *Trichobius*, I adopt the name and describe it as new.

### TRICHOBIUS nov. gen.

Head more or less flattened, tubercular, or warted above; eyes situated nearer the middle than the back of the head, distinct; antennæ (?) distinct, apparently single jointed, with a terminal bristle; ocelli absent. Wings present, much longer than the abdomen, with six longitudinal and three transverse veins; first longitudinal vein ending in the front margin at about the outer two-thirds of the wing; second ending a little before the tip; third forking from the second near the base of the wing, and ending exactly at the wing tip; anterior transverse vein a little below (behind) the furcation of the second and third veins; the hindmost (innermost) cross-vein, which may be called the posterior, near the margin somewhat below the anterior and between the fifth and sixth veins; the other cross-vein, which may be called the apical, near the margin of the wing and between the fourth and fifth veins. Legs moderately short, somewhat stout; tarsi 5-jointed, the first joint of all pairs not perceptibly longer than each of the three following, very short; claws stout, two-toothed.

I take pleasure in naming this interesting species in honor of Dr. Alfredo Duges, of the Colegio del Estado, at Guanajnato.

**Trichobius dugesii** nov. sp.—Entirely tawny, or very pale reddish yellow. Head flattened, warty above, bristly below and at the vertex, rounded in outline, light fulvous; eyes silvery. Thorax deeper fulvous, bristly above, transverse suture distinct, also dorsal and humeral sutures. Abdomen very light fulvous, somewhat bristly on the sides and at the extremity. Legs fulvous, femora enlarged, very bristly above; last joint of all the tarsi as long as the four very short joints that precede it taken together; claws stout, black, two-toothed; tibiæ and tarsi short pubescent. Wings very light fulvous, with veins deeper fulvous; entire wing borders and veins bristly. Length of body, 1⅓ mm.; to tips of wings, 2½ mm

One specimen, taken on *Glossophaga soricina*, Guanajuato, Mexico.

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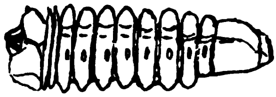
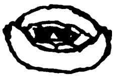
## LARVA OF POLYCESTA ELATA Lec.

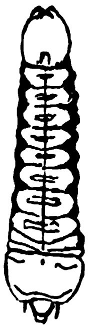
By G. W. J. ANGELL, N. Y. City.

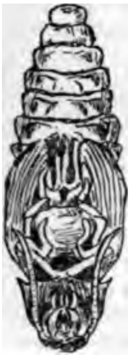
Form elongate, flattened, dorsal and ventral surface slightly convex. Color white; segments thirteen, three thoracic and ten abdominal. First four abdominal segments equal in width, fifth to tenth gradually tapering. Last segment conical, truncate;

anal opening longitudinal. Prothorax large, narrowed in front; a fuscous cuneiform median sulcus extending from anterior margin to base. Spiracles nine; first large, fuscous and crescent shaped, situated in fold of the infero-lateral plate of mesothoracic segment at the juncture of dorsal plate. Spiracles second to ninth small, black or fuscous, situated on first eight abdominal segments near anterior margin of dorsal division, increasing in size from second to fifth, and decreasing from fifth to ninth. Head rather prominent; oval and convex, densely clothed with short fuscous hairs, a small punctiform fova on each side. Clypeus emarginate, with dark chitinous borders. Labrum coriaceous, fuscous at base, anterior margin slightly sinuate. Mandibles short, stout, cleft at tip, grooved at base; mentum coriaceous, emarginate and trisinuate. Labium membraneous, cordate. Paraglossæ prominent. Antennæ small, three-jointed, situated near base of mandibles. Length of full grown larvæ from two to two and one-half inches.









Breeds in post oak (*Quercus obtusiloba* Michx), cutting a grooved channel, slightly flattened, in general course parallel to and near the bark. The figures are life size, drawn from larvæ and pupa; raised from specimens received from Cypress Mills, Texas.

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## SOME NEW AND BEAUTIFUL ÆGERIADÆ.

By BERTHOLD NEUMOEGEN, New York.

Although our fauna contains quite a number of Ægeriadæ, t the group does not seem so prolific as its European relatives id the American insects, among whom there are some extremely autiful and striking species, are counted as rarities up to this ay. Since Mr. Hy. Edwards has sifted the various genera some years ago, very few new comers have been announced. It therefore affords me great pleasure to be able to describe some prominent new species.

**Trochilium californicum** n. sp.—Palpi, head, collar, abdomen and legs, bright sulphur color. Antennæ light brown, thickening in centre and curling at tips, minutely pectinated. Thorax black, with light yellow borders. Primaries and secondaries vitreous; the costa, margins and nervures in both of them, as well as the discal spot of primaries, of light coffee brown. A bright yellow spot at base of primaries. Fringes light coffee brown. The first two segments of abdomen black, with a small yellow intersection of remaining segments a few slightly marked with black lines. Expanse of wings, 37 mm.; length of body, 15 mm.

*Hab.*—Central California. Type ♀, coll. B. Neumoegen.

This insect comes very near *T. pacificum* Hy. Edw., of which it seems to be the southern representative. It is easily distinguished by its antennæ and abdomen, besides being a smaller insect.

**Trochilium minimum** n. sp.—Antennæ black, pectinated. Palpi, head and collar yellow, the latter with a black border; patagiæ black, with yellow rims. Legs and abdomen yellow, the latter with black segmentary bands. Primaries and secondaries above vitreous; costæ, margins, discal spots on primaries, nervures, fringes, uniformly brown. Below, costa and discal spot of primaries, as well as anal margin of secondaries, have a yellow tinge. Expanse of wings, 29 mm.; length of body, 10 mm.

*Hab.*—Denver, Col. Type ♂, coll. B. Neumoegen.

Mr. D. Bruce caught this specimen, and informs me that its larva feeds on willow. He will probably be able to give a full description of the latter next season. This is the smallest North American true *Trochilium* so far known, and comes very near the European *Trochilium melanocephalum* Dalm.

**Laranda palmii** n. sp.—♂. Antennæ slightly pectinated. Palpi light red. Head black, collar yellow. Thorax black, overcast with red dust. Abdomen black, with first and fourth segments yellow, and red anal tuft. Below yellow, dusted with red. Legs brownish red; fringes black. Primaries slender, of reddish tinge, overcast with black, especially along costa, apical space and exterior margin. Secondaries about one-third larger than primaries; bright red. Basal half hyaline; black shades at apex, exterior margin and anal angle. Below, primaries black, shading into red at base, costa and along exterior margin. Secondaries red, hyaline; nervures and fringes black.

♀.—Antennæ slender, simple, much larger than the ♂, and wings not so disproportionate. Primaries and secondaries bright red; costa and exterior margins prominently black, with black areas at apex and anal angle of secondaries. Below, a large part of inner space of primaries black; costa and margins bright red. Secondaries with black nervures. Expanse of wings, ♂, 25 mm.; ♀, 27 mm.; length of body, ♂ 9 mm.; ♀, 11 mm.

*Hab.*—South Arizona. Types, three males and one female; coll. Charles Palm and B. Neumoegen.

I take great pleasure in dedicating this beautiful insect to my friend, Mr. Charles Palm.

**Albuna vitrina** n. sp.—Head black; palpi and collar yellow. Thorax black. Antennæ brown, pectinated; caudal tuft narrow and black. Legs black, with yellow joints. Primaries and secondaries vitreous; prominent discal spot on primaries; costa, margins, discal spot and nervures brown, with a basal dot of same color on both wings. Below the same, except that nervures of costa and interior margin of primaries are pale yellow. Expanse of wings, 21 mm.; length of body, 10 mm.

*Hab.*—Ft. Calgary, N. W. Territory. Type ♂, coll. B. Neumoegen.

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# NOTES ON THE EARLIER STAGES OF LEPISESIA FLAVOFASCIATA Barnst:

By Carl Braun, Bangor, Me.

(Continued from p. 89, Vol. II, No. 5.)

The freshly-laid egg resembles that of *Deilaph. chamænerii* very much; indeed, at the first sight, one who is acquainted with the ova of the Sphingidæ would take it to be nothing else, so striking is the resemblance in size, color and form. It is grass-green, with a smooth surface without granulations, in form spheroidal; diameter about one-third of an inch; they change before hatching, which takes place in from five to six days, to a yellowish white color. The young larva is three-sixteenths of an inch long, cylindrical, yellowish white with a large head, on each side of which is a large black eye-spot. The head resembles in comparison that of a pug dog. All the legs are tipped with black; the horn, which is short, stout and straight, is tipped with black. The first molt is made in seven days. The color changes now to bluish green, with a faint rosy, irregular longitudinal stripe on the back. The color on tip of horn is violet or black, it grows shorter at every change, till it finally is discarded at the third molt, and only a shiny botton remains, which has a black rim. After the third molt the larva changes to light brown on sides and darker above, beneath rosy.

Of nine full grown larvæ the smallest measured 1.50 inches, the largest 1.68 inches. The color is of a uniform chocolate with a smooth surface, rosy beneath; legs tipped with black, two large black eye-spots, one on each side of head, which is large in comparison to body. The larva is stout and cylindrical; they feed from thirty-five to thirty-seven days on *Epilobium*. Pupation is on top of ground, among leaves, making an attempt at a light cocoon similar to the manner of *Hemaris thysbe* and *diffinis*.

The newly-made pupa is from seven-eighths to one inch long, stout, with prominent head of ochre yellow, which changes to chestnut in some and blackish brown in others. The cremaster is short and stout, with seven terminal hooks; in some, nine; in others, which are barbed, a silk thread attaches the hooks to the leaf cocoon. The habits of the larvæ are peculiar; they feed mostly at night, hiding on the under side of the leaf by day with head thrown to the right side of body; they are very restless when young, but soon become quiet after they have once settled on their food; they require a great deal of care, and need plenty of good air, and will not thrive in the glass jar, but will do well on the food put in water with a fine gauze-net over it in a shady place.

In the next paper I will attempt to describe the earlier stages of *Smerinthus cerisyi*.

## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA.

The eggs of butterflies and moths are very carefully laid by the female insect on the appropriate plant on which the young caterpillars are destined to feed. They are unerring botanists in this respect, and never make a mistake, although they sometimes deposit eggs on plants the leaves or stems of which mingle with those on which the larvæ are to feed, and to which they soon find their way. The eggs are secured to the plants by a kind of glue or cement, which soon dries on exposure to the air, and is necessarily insoluble in water. They are laid singly or in varying numbers. Sometimes they are all laid together and with much regularity on the leaf or around a twig; in this case the young larvæ are gregarious, and continue to feed in a community. Some species are gregarious, while the larvæ are young, but separate as they approach full growth and shift for themselves. The eggs, to a certain extent, mimic their surroundings to protect them from spiders and birds, and also from parasites that feed on them. The eggs of *Tolype velleda* are laid in strings, and are covered by hairs from the tuft at the end of the abdomen of the female moth and they closely resemble a hairy caterpillar.

"The eggs of butterflies are composed externally of a thin pellicle, separated into the base, walls and micropyle (apex of the egg and place where the male fertilizing cells enter)." The micropyle is made up of very small cells, and the walls are either smooth or variously sculptured. They vary considerably in shape, the principal varieties being globular, hemispherical, cone, or spindle shaped. White or green are the prevailing colors, although they may in some cases be yellow, red or brown. As the young caterpillar develops, its color may be seen through the thin and delicate walls of the shell, and this makes the egg appear black. The eggs of the Satyrinæ, Nymphalidæ and Papilionidæ are globular; in the Hesperidæ they are usually hemispherical, and in the Pierinæ they are spindle-shaped. The hatching period is a variable one, depending on temperature and exposure to the direct rays of the sun. It may be stated in a general way that they hatch in from three to twenty days, according to the species. Some species pass the Winter in the egg state, although the vast majority live during this period as chrysalids. The eggs of lepidoptera make very pretty and interesting objects for study under a magnifying-glass or microscope, and the different eggs of the different species bear the same relation to each other as do the different species in the perfect or imago state, and there is no doubt but what a system of classification could be formulated from these alone. The eggs of some species are very readily found, and the writer would urge the beginner to look on cabbage plants for the odd little spindle-shaped eggs of *Pieris rapæ*, and study them under a glass and see the micropyle, etc., and then place them in a box with the food-plant and rear the young larvæ to the perfect state, and thus gain a knowledge of the life-history of one species, which will be a good guide to the study of all others. The eggs of *Danais archippus* are also readily found on the common silk or milk-weed (at the present time, May 10th). They are generally deposited on the underside of a leaf, and usually only one on a plant, and if the leaves are carefully examined the eggs are easily seen. They are conical in form and longitudinally ribbed, and between these run transverse ones. They are white when laid, but gradually turn yellow, and just before the young caterpillar is to emerge they change to a steel-gray color.

Another common species which is often found depositing its eggs on clover is *Colias philodice*. The egg of this species is in the shape of a spindle, and is attached to the plant by the point or one end. They are pale yellow when first laid, but soon change to a dark crimson, and are very interesting and pretty objects. They are also longitudinally ribbed and crossed by striæ. It would be well if egg hunting were considered more profitable by lepidopterists, as there is no doubt but what great expertness could be acquired in this line, and in this way much interesting knowledge would be gained, and when they were carried through to the perfect state nice, bright, and faultless specimens would be obtained.—ED.

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## Pupa of Plastocerus Schaumii.

By FRANK E. BLAISDELL, M.D., Coronado, Cal.

Length 13.4 mm. Form elongate, curved, non-pubescent. Color of head, thorax and members, dirty white, with slight tinge of yellow; head and thorax opaque; members translucent; abdominal segments fulvous; central portions opaque; borders semi-transparent. Head deflexed and sunken, rather deeply into prothorax; front full, with two slight depressions separated by a median longitudinal ridge; denticulation of mandibles visible. Antennæ curved, thrown back so that middle of the convexity touches corresponding portion of the side of prothorax; apices near or resting against knees of anterior and posterior limbs, which approximate; pectinations directed inwards and backwards. Prothorax quadrate, flexed upon mesothorax; anterior angles overlapping the eyes, so as to cover the posterior half of their surface; posterior angles prominent, strongly divergent; anterior border bearing two spines, each being situated at the junction of the middle, with an outer third. Spines moderately divergent, basal halves straight, stout; apical portions slender, curved, chitinous; tips piceous. Mesonotal region depressed; elytral pads striate, much narrower than those of wings, scarcely reaching base of fourth abdominal segment. Metanotal region full, prominent; alar pads with apices nearer median line and posterior to those of elytra, overlapping base of fourth abdominal segment; anterior pair limbs extending to base of second abdominal segment; median pair to opposite base of third, posterior pair to centre of sixth segment. Abdomen depressed, moderately curved upon itself; sides feebly convex. Segments nine, decreasing very slowly in width to fifth, then more rapidly; third, fourth, fifth and sixth, subequal; first shorter than second, which is shorter than third; eighth two-thirds as wide as third, shorter than seventh; ninth (anal) sculptured, partly sunken within eighth; from its dorsal surface and beneath posterior border of eighth two spines project, which are divergent, slightly recurved, chitinous. Sexual characters: male distinguished by the longer antennal pectinations. There is no appreciable difference between the eighth ventral segments in the two sexes.

Two specimens (♂ and ♀), Coronado, San Diego County, taken June 24th and July 1st, 1890, from 20.32 cm. below the surface of the soil. Position and pupal chamber had been destroyed before they were observed. From the appearance and position of the spines, I would infer that the pupa approaches the surface previous to the emergence of the imago. The adult insect is vividly portrayed at this stage, the quadrate pronotum suggests *P. frater*. One specimen was permitted to complete the transformations, the imago possessing a narrow prothorax and divergent posterior angles, characteristic of *Schaumii*. Six days previous to the appearance of the imago, the eyes and mandibles began to darken; prothorax darkened, but slightly. The hardening and darkening of the imaginal exoskeleton progressed very slowly; head and thorax had darkened by the fifth day; abdomen and elytra by the tenth day. The larva has not yet been recognized, but believe I possess it among several species of Elaterid larvæ.

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## **Note on Sphenophorus minimus** Hart.

By JOHN HAMILTON, M.D., Allegheny, Pa.

Examining some indeterminata taken here, which have been accumulating during several years, two specimens of *Sphenophorus minimus* Hart were discovered,—a species described lately by Mr. A. C. Hart in an article entitled, "The Corn Bill Bugs," in which he writes an excellent "Key to the Illinois Species" (*pertinax*, *robustus*, *costipennis*, *scoparius*, *sculptilis*, *cariosus*, *melanocephalus*, *Sayi*, *placidus*, *minimus* and *parvulus*). The article treats these species exhaustively, accompanied by hree plates of well executed, enlarged figures, and is published in the 16th Report of the State Entomologist of Illinois, being the 5th Report of S. A. Forbes for 1887–88, pp. 58–74, and plates I, II and III in part.

As this species is evidently local, and perhaps in many collections as an indeterminate, a presentation here of its distinguishing characters may be opportune, as comparatively few, to whom it might be useful, are likely to meet with the Report in which the description is published.

**Sphenophorus minimus** Hart.—Black, opaque when denuded, covered with a thin cinereous indument, argillaceous in the large punctures, except rostrum before antennæ; antennal club and basal portion of anterior femora internally, shining black; funicle and tarsi polished rufous. Rostrum, ♂, half as long as thorax, finely punctured for a short distance in front of the eyes and not deeply canaliculate, slightly arcuate, moderately compressed, scarcely wider to tip, base abruptly dilated over the scrobes and coarsely punctured, as is likewise the head; thorax longer than wide, nearly as wide as the elytra, moderately constricted at apex, base and apex behind constriction subequal, slightly widest before middle, behind which the sides are nearly parallel to base, which is roundly truncate each side; surface sparsely, irregularly variolato-punctate, with large shallow punctures; a small, median, smooth space, tending to obsolescence, or to project backwards as a fine line; anterior constriction with close-placed, discrete, shallow, variolate punctures to margin; scutellum elongate, narrow, not channeled, coated normally, but liable to abrasion. Elytra widest near base, gradually narrower to tip, finely striate, striæ each with a few distant, coarse, variolate punctures placed transversely in rows, the depressions around which make the surface uneven; intervals flat, equal, when denuded finely uni-seriately punctured; pygidium shallowly punctured, pubescent with yellow bristles near tip, and on each side of apex with a small tuft. Underside with small, discrete, variolate punctures. The centre of all the punctures is luteous, which, contrasted with the cinereous surface, causes a spotted appearance. Length 5 mm.

This species belongs to the fifth section of Dr. Geo. H. Horn's synopsis (Proc. Am. Phil. Soc. Phil. xiii, 421), where it forms a third division under Section A, with this definition: *Thorax sparsely and irregularly punctured with large variolate punctures.* The above characters are derived from the two specimens in my collection. Mr. Hart's description was made from six males and five females, taken from floating driftwood and logs near water, at Urbana and Springfield, Ill. Length 5–6 mm. The smallest species in our fauna, Mr. Hart says. I have ten examples of *parvulus* from Illinois and Iowa, none of which exceed 5 mm. Measurements from anterior margin of thorax.

# Preparatory stages of Spilosoma latipennis Stretch.

By HARRISON G. DYAR, New York City.

*Egg.*—Not observed; the eggs had been entirely devoured by the little larvæ, but, judging from the marks left on the leaf, were about .6 mm. in diameter.

*First stage.*—Not observed, but judging from the cast skins very similar to the second stage. The head was pale, the jaws brown, width somewhat over .3 mm.

*Second stage.*—The larvæ were found in this stage June 26th on an ash leaf, some twenty or thirty together. Head pale whitish, brownish on the clypeus and at vertex; ocelli black; width .4 mm. Body whitish, the warts concolorous and hardly distinguishable, bearing long whitish hairs. Length of larva 3 mm.

*Third stage.*—Head shiny, pale yellowish, faintly brownish at the vertex, ocelli black; jaws brown; width, .6 mm. Body as before, the warts small, concolorous, and bearing long blackish hairs.

*Fourth stage.*—Head as before, but not brownish at the vertex; width .9 mm. Body pale whitish, semi-transparent, the food showing through as a darker band. Hair rather long, whitish. Length 8 mm.

*Fifth stage.*—Head pale straw color, ocelli black, mouth brownish; width 1.1 mm. Body as before, the hair whitish and rather abundant.

*Sixth stage.*—As in the previous stage; width of head 1.3 mm. An orange subdorsal spot on joint 12, and a much fainter one on joint 3.

*Seventh stage.*—As before; width of head about 1.6 mm. (measurement not very accurate) A blackish subdorsal shade band and row of segmentary white dorsal spots faint at the extremities of the body. Hair rather long, mixed with black.

*Eighth stage.*—Head testaceous; jaws dark brown; ocelli black; width 2.1 mm. Body sordid greenish, mottled with black over the dorsum, a white dorsal and super-stigmatal line and pale stigmatal shade; spiracles white, in a narrow black border; warts large, concolorous. Hair rather bristly, of irregular length, tawny brown, mixed with blackish; on joint 12 an orange spot surrounding the wart of row three. Thoracic feet testaceous.

*Ninth stage.*—Head brownish testaceous, mouth pale, ocelli and jaws black; width 2.3 mm. Body nearly black from the thick mottlings, the dorsal and super-stigmatal lines white; spiracles as before. Thoracic feet testaceous, abdominal feet black outwardly; a subdorsal orange spot before wart three on joint 12. Venter as black as the body above; warts large, pale yellowish. Hair foxy red, mixed with blackish.

*Tenth stage.*—Exactly as in the previous stage; width of the head 2.6 mm.

*Eleventh stage.*—Head testaceous brown, labrum, mouth and antennæ pale; width 3.1 mm. Body nearly black, with only the merest traces of the lines, the orange spots on joint 12 small; spiracles white. Thoracic feet brownish testaceous, the claspers of the abdominal feet pale; warts pale; hair bristly, blackish, appearing foxy red next the body. The larva resembles the dark brown form of *Spilosoma virginica* in appearance.

*Cocoon* formed of the larval hairs held in place with silk as in other species of *Spilosoma*.

*Pupa* robust; nearly straight along the ventral line, slightly contracted along the ventral line, slightly contracted laterally behind the thorax. Abdomen large, rounded, the last segments tapering rapidly; cremaster flat, short and thick, furnished with many short knobbed spines. Thorax and cases creased; body coarsely, but densely punctured. Color pitchy black, shiny, the spiracles pale reddish.

The larva matured and began to form its cocoon September 3d, giving a larval period of over ten weeks. A male imago emerged in a warm room on March 12th, the next year.

It will be observed from the measurements given above that the widths of head follow the calculated series well, except the ninth stage, which is entirely superfluous, being inserted as a geometric mean between the eighth and tenth stages at a much higher ratio than any other stage, viz., calculated, .4, .5, .7, .9, 1.1, 1.3, 1.7, 2.1, 2.6, 3.2, ratio .80, giving but ten stages; found .3, .4, .6, .9, 1.1, 1.3, 1.6, 2.1, 2.3, 2.6, 3.1. The ratio between the 8th, 9th and 10th stages as found is .90, which, if kept up, would interpolate an extra stage between every one. Does this indicate that this species has normally but ten stages, and that the 9th as observed by me is unusual, being produced by scarcity of food or some other cause? It is to be noted that I did not find its markings to differ at all from those of the 10th stage.

Mr. Hulst, in the brief, but only published account of this species,* apparently found but six larval stages, but in the absence of any measurements it is useless to speculate on this. While I do not deny that the number of stages of this as well as other species, may be subject to variation under varying conditions of climate or food, or even under normal conditions, I hold that it is very far from having been proved. This will require accurate observation, in my opinion best accompanied by measurements, so that it can be seen where the variation, if any, occurred, as well as to serve as a check on the accuracy of the work.†

*Food-plants.*—The larvæ are probably omnivorous. Though found on ash, they seemed to prefer various herbaceous plants as they became older. Larvæ from Dutchess County, New York.

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* Bull. Brooklyn Ent. Soc. viii, 120.

† See further Psyche, v, 420.

# Callidryas eubule in Missouri.

By R. R. Rowley, Curryville, Mo.

My acquaintance with *Callidryas eubule* began in the Summer of 1881. About the middle of August numbers of this splendid insect flitted about the streets of Louisiana, Mo., and I succeeded in taking a fine female on garden flowers. As I had never met the species before, and as all the specimens observed seemed to be moving in the same direction, as well as because of the sudden appearance and disappearance of so great a number of strange insects, the impression was left in my mind that they were inhabitants of another clime and were migrating.

A close watch through the Summers of 1882, 1883 and 1884, failed to discover a single specimen, and I had about abandoned all hope of adding to my meagre knowledge of this golden winged fairy, when returning from a day's tramp in the woods and fields, about the middle of the afternoon on the 17th of October, 1885, a fine male *eubule* sailed quickly across my path and settled for a moment on a tall Autumn flower just over the fence, almost beyond my reach. I collected myself quickly from the astonishment into which its sudden appearance had thrown me, and with the full length of my long net-pole, carefully and tenderly swept in the treasure. It was a bright, new specimen, and had doubtless flitted out into the sunshine for the first time that pleasant October day, as not a scale had been disturbed on its pretty wings. I had added a new and interesting chapter to the few facts gathered four years before, and had completely reversed my first impressions, being now satisfied that *eubule* dwelt here among us.

Through several succeeding Summers I made frequent trips to a bunch of *Cassia marilandica*, four miles away, but without finding an egg or a larva (I had found this clump of *Cassia* in chasing *Terias nicippe*), having learned from some entomological source that the larva of *eubule* feeds on *Senna*. Though I saw occasional imagos high on the wing, I learned nothing concerning its preparatory stages till the mid-summer of 1888. In that year *Terias lisa* was very abundant, and I had observed the females of that species depositing eggs on *Cassia chamæcrista*, a very abundant plant along the railroad and in adjoining fields near Curryville. In searching for the larvæ of this latter species, on the 4th of

August, I found seven fine *eubule* caterpillars. Later in the same month I obtained two more and captured a number of imagos.

*Eubule* is a very difficult butterfly to take, usually soaring beyond the reach of the net. I have taken it at mud and on red clover and "milk-weed" blossoms. It is wary and difficult to approach, settling on a flower but for a moment.

The grown larva is from 1¾ to 2 inches in length, and varies in color from a light green to a yellowish green, the entire body being covered with raised black points. There is a bright yellow longitudinal line or band below the spiracles, and on each segment there is a cross line or band of dark blue, preceded by a broken line of the same color extending downward to the longitudinal band. The light green larva wants these cross lines of blue, black segmental dashes, encircled by blue, either side of the yellow band taking their places. The underside of the body is light green. Head yellow, with a yellowish green face. Top of head set with raised black points. Feet yellow. None of the larvæ, before the fourth moult, show the cross blue bands. The young larva is light yellowish green with the yellow band and raised black points.

The pupa is 1½ inches long, a beautiful light green with a mid-dorsal dark line and a light lateral line to each side. Wing cases very much humped, giving great breadth to the body. A long thorn like spine projects forward from the front of the head. Length of pupal period ten days. From the suspension of the larva to pupation is from twenty-six to twenty-eight hours.

*Eubule* seems to be a very delicate insect and difficult to rear in confinement. Out of nine larvæ handled, but two reached the imago, and these were about ready to suspend when found. The remaining seven died after suspending, either just before or just after pupation, the fine green of the new pupa soon becoming a dark putrid mass. Besides *eubule*, I have found feeding on *Cassia chamæcrista* the following species: *Terias lisa* and *Hyperchiria io*.

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No number of the NEWS will be published for July or August. These two months will be devoted to collecting by the subscribers and editorial committee.

This number of the NEWS contains 28 pages.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

TO OUR PATRONS.—We want to increase the number of pages of ENTOMOLOGICAL NEWS and thereby augment its usefulness. To do this we must obtain a larger number of subscribers and thereby increase the income. There are doubtless many persons in this country who are interested in the study of Entomology, who have not yet heard of the existence of such a journal as ENTOMOLOGICAL NEWS, and who would probably become subscribers if their attention were called to it. The question is, how to reach these persons? It has been suggested that each subscriber make a list of the names and addresses of all whom he or she know are interested in the study and send it to the Editor, that a sample copy may be sent to all who are not already on the subscription-list, as an invitation to subscribe. This is a good suggestion, and we therefore ask our subscribers to assist us in this way. As another method of increasing the list, we have concluded to offer premiums for **new** subscribers, and call attention to this in a notice to be found on the second page of the cover of this number of the NEWS.

THE IDEAL entomological journal is one that covers the whole field, and each number should contain matter that will please all its readers. The dry scientific article should have a place along with that of a more popular and lighter vein. A journal, any number of which is made up largely of a dry synopsis of a single family in an order, is of value to only a very few readers, and the large remainder are disappointed and obliged to wait another month in hopes of finding something more tempting. The subscribers are made up of the professional entomologist, the systematist, the lover of nature in general, the amateur entomologist, those interested in Entomology in general, those interested in a single order, the student and the beginner, and the scope of a journal should be such and the paging sufficient in each number to supply readable matter for all. The lepidopterist, the hymenopterist, or the neuropterist, cares little for an article on some obscure family of beetles, and the coleopterist is equally dissatisfied with the same program in the other orders; therefore, the ideal journal is one that covers the subject from A to Z; or, to give an illustration, the intergrades may be filled in between to such articles as these, "Notes on the Genitalia of Gynandromorphous Macro-lepidoptera" and

"There was an old man in a tree
Who was horribly bored by a bee.
When asked 'Does it buzz?'
He replied, 'Yes, it does,
It's a regular brute of a bee.'"

ED.

*Hetærius brunnipennis.*—A recent addition to the collections at the Academy of Natural Sciences of Philadelphia is a hill of the mound-building ant, *Formica exsectoides*, from the vicinity of Altoona, Pa., containing a living colony of ants, measuring about three feet in diameter at the base and about two feet high. It is remarkable, considering the size, that over two hundred examples of *Hetærius brunnipennis* have been captured upon the exterior of the hill, seemingly creating a doubt as to whether it is really a colony of ants, or one of *Hetærius*. The first specimens were observed by Mr. W. J. Fox, on March 30, 1891, and since then the writer has taken small lots at intervals of three or four days, covering a period of six weeks, the specimens gradually getting less abundant. The lower half of one side of the mound, which is almost perpendicular, is completely honey-combed by exposed galleries, and out of these occasionally one or two *Hetærius* would suddenly make their appearance and roll to the bottom of the hill. Apparently the ants had carried these to the open ends of the galleries and unceremoniously tumbled them out. A great many times ants were observed emerging from the galleries with *Hetærius* in their jaws, which they would carry a short distance from the mound and drop, the ants returning without giving them any further attention. Nearly all the *Hetærius* that were seen in motion, were intent upon re-entering the hill, but were usually bottled before they could do so. Sometimes the *Hetærius*, when touched with a wisp of straw, would double up their members and drop, feigning death after the manner of other members of the family. At other times when touched they would display considerable activity, although awkward and unwieldy in appearance could run along quite rapidly. An examination of small heaps of dead ants in the extreme corners of the table upon which the mound has been placed, failed to discover the presence of any *Hetærius*. But one other coleopter was taken, a species of Pselaphidæ. A small dipter was noticed in numbers running about, continually in motion, but rarely taking wing. What the exact contents of the mound may be will remain in doubt, as all observations were necessarily made from the exterior, it being the intention to preserve the hill in its entirety.—CHAS. LIEBECK.

**Excursion!**—The entomologists of New York, Brooklyn, Newark, Philadelphia and localities near these cities are invited to attend the second annual field meeting to be held under the auspices of the entomological societies of these cities at Jamesburgh, N. J., on July 4th next. Jamesburgh is on the Amboy division of the Pennsylvania Railroad, and may be reached from New York, via. Monmouth Junction, 7.20 A.M.; Newark, 7.50 A.M.; Philadelphia, Broad Street, 6.50 A.M.; Camden, 7.00 A.M. Later trains leave New York via. Rahway and Philadelphia on the Long Branch division, but it is urged that the early train be used, as this will bring the party into Jamesburgh at the same time. All those desiring or expecting to attend will please notify one of the members of the committee, from whom also all further information can be obtained. The notification is important, in order that proper arrangements may be made at Jamesburgh.

*Committee:* C. P. Machesney, 65 Broadway, N. Y.; Dr. Henry Skinner, Amer. Ent. Soc., Logan Square, Philadelphia; Prof. J. B. Smith, New Brunswick, N. J.; H. W. Wenzel, 1115 Moore Street, Philadelphia, Pa.

OF *Amphion nessus*, Dr. Holland is recorded as saying (in Smith's "Sphingidæ of America North of Mexico," page 126) that "if flying in the middle of the day he 'has noticed that it always keeps in the shadow, or slyly hovers about among the thick masses of the *Syringa* blossoms in the deep umbrageous recesses, where it is not easily reached by the net of the collector.'" This is at variance with my observation. June 1, 1890, I collected some 18–19 imagines (imagos) in the hot sunshine, between 1 and 3 P.M., all feeding on the flowers of Blue Flag (*Iris versicolor*). My attention was called to the spot in a swampy meadow in one of our suburban districts of Westchester County by a few fine *Papilio turnus* hovering over the blue masses of *Iris*. The *A. nessus* had no opportunity to hide in trying to obtain nectar from the open flowers of Blue Flag, and was easily taken while exploring the tubular *Corolla* for dainties. Out of some twenty specimens I saw on two successive Sundays feeding on *Iris versicolor*, I only missed one. Neither did they exhibit any greater shyness than does *Hemaris thysbe* visiting the thistle flowers. Of course the large flowers of Blue Flag do not compare favorably with the thyrses of Lilac blossoms, many hundreds of which are closely crowded together, and a hawk moth in visiting its flowers, of necessity must frequently appear to be in the shadow of the larger flower truss of *Syringa vulgaris*, or *S. persica*. In July, 1889, I took a single specimen of *A. nessus* feeding on the flowers of a *Deutzia crenata*. I could not readily take it, because it so dodged in and out among the white flowers of the drooping *raceme*, that it was difficult to follow its rapid movements. Go to Blue Flag when in flower, and it is not difficult at all to take *A. nessus*.—R. KUNZE, M.D.

IN some years' collecting in Essex County, N. J., I have always noted, with more or less interest, the small colonies of one of our common "lady birds," *Megilla maculata*, which hibernate under leaves, stones, etc., through the Winter. These colonies have always ranged from 100 to 200 individuals with occasionally one of some 500. On March 6th I found one of unusual size, and being curious as to the number it contained, I collected the entire colony with the help of my brother. It numbered 1412. They were on the south side of a chestnut tree under a small cluster of old chestnut burs. I thought this large number collecting, whether for social or sexual purposes (and I am inclined to think the latter has a good deal to do with it), might be interesting to some of the readers of ENTOMOLOGICAL NEWS who are coleopterists.—RALPH HOPPING.

A WORD about *Argynnis idalia*, which are with difficulty taken even when feeding on their favorite swamp milkweed (*Aslepias incarnata*). Not far from New Rochelle, Westchester County, N. Y., in a wet swamp, I obtain some specimens every season. In July, 1890, when this milkweed was in full flower, I went there as usual with my largest net, fifteen inches in diameter, with which I can capture twice the number than with an eleven inch affair. After securing a specimen or two it turned to a drizzling rain. Nothing daunted, my feet being wet already, I tramped hither and thither through the long, wet grass and tall weeds, every now and then starting up an *Arg. idalia* much in the same manner that a hunter flushes woodcock in a swamp. The *A. idalia* were thoroughly wetted like myself and never flew far away, so that I could easily mark the spot, walk up stealthily and readily take my prize.—RICHARD E. KUNZE, M.D.

MR. EDITOR.—You refer in the May number of your esteemed paper to a noctua caught by Mr. J. T. Mason, of Houston, Texas. I identified this insect last Summer as belonging to the genus *Euglyphia*. Its correct name is *Euglyphia fastuosa* Guén. (Guén. No. 186. Herr.-Sch. Cuba, 1868, p. 9), and it is fully described in Dr. J. Gundlach's "Contribucion a la Entom. |Cubana," p. 304. This insect is likewise found in the West Indies and South America. In Cuba its larva feeds on malva-té (*Corchorus siliquosus*). It transforms above ground, making a sort of nest from little bits of grasses. Prof. J. B. Smith, in his new check list, will assign it to the genus *Noropsis* Guén., "of which," as he says, "it is the type, *Euglyphia* being restricted to other species by him (Guén.)."—NEUMOEGEN.

The synonymy of the moth is *hieroglyphica* Cramer, = *elegans* Hüb., = *fastuosa* Guénee.—ED.

THE LAST of August, 1890, I took in southern Michigan a good female of *Apatura clyton*. I do not know that it has been reported before from Michigan. The fact that it is the only one I have ever taken, and that I took it on ground that I have worked over for several years, made it quite noticable to me. I had gathered together a lot of ripe pairs, put them in a pile, and had crushed them as a bait for Graptas and *Limenitis ursula*. This *Apatura* was taken on the crushed pears with those mentioned.—I. N. MITCHELL, Fond du Lac, Wis.

A SAVANT'S HORRIBLE DEATH.—Algiers, May 18th. The French savant, M. Kunckel Herculais, the president of the ethnological society, who was employed on the government mission of investigating the locust plague in this province, has met with a horrible death. While examining a deposit of locusts' eggs at the village of Sidieral he was overcome with fatigue and the heat, and fell asleep on the ground. While sleeping he was attacked by a swarm of locusts. On awakening he struggled desperately to escape from the flood. He set fire to the insect-laden bushes near him, but all his efforts proved ineffectual, and, when finally the locusts left the spot, his skeleton was found, together with his hair, beard and necktie. The rest of him had been entirely devoured. Mr. Herculais was a member of the French Academy, and the author of several valuable works on insects.

*Psyche confederata* G. and R. has been quite abundant for two years past on the grounds of the Ohio State University, Columbus. I infer, from references made to it by Mr. H. G. Hubbard, in "Insects Affecting the Orange," 1885, that it is not known to be widely distributed or common elsewhere.—D. S. KELLICOTT, Columbus, Ohio.

THE LAST SEASON was not a very propitious one for collecting lepidoptera in this country, and most of my collectors did only fairly well. Mr. Bruce succeeded in obtaining some of the rarer Arctians, Cossidæ and Bombycidæ in Colorado. Mr. Bean, of Laggan, raised the beautiful *Colias elis* ♂ and ♀, *Antarctia Beanii* Neumg., etc., from the larvæ, and captured a new *Chionobas*, coming very near *subhyalina* Curt. My collector on the upper Indian River, Fla., caught several specimens of the handsome sphinx *Dilophonota caicus* Cr., which will have to be added to our fauna. So far the latter insect has only been obtained in Hayti, Honduras and some parts of South America.—B. NEUMOEGEN.

MESSRS. Fox and Johnson arrived in Philadelphia, Thursday, May 14th, after a successful collecting tour in Jamaica. They saw one specimen of *Papilio homerus*, but did not succeed in capturing it.

Prof. I. N. MITCHELL reports *Vanessa californica* as having been taken at Fond du Lac, Wis.

Mr. H. F. WICKHAM left May 9th for a collecting tour in Alaska. He expects to be gone until September.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for A. F. Winn, W. C. Wood, F. H. Hillman, T. W. Glover and E. B. Southwick.

## Entomological Literature.

TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1891, pt. 1, 178 pp. 9 plates.—Notes on the Genitalia of a Gynandromorphous *Eronia hippia*, by Geo. T. Baker. A monograph of British Braconidæ, pt. 4, by Rev. Thomas A. Marshall. African Micro-Lepidoptera, by Right Hon. Lord Walsingham. New species of moths from southern India, by Col. Chas. Swinhoe. Conspicuous effects on the Markings and Coloring of Lepidoptera caused by exposure of the pupa to different temperature conditions, by Fred. Merrifield. On some recent additions to the list of South African butterflies, by Roland Trimen.

THE BUTTERFLIES OF NORTH AMERICA, by W. H. Edwards; third series, pt. 11.—This contains the life-histories of *Apatura flora*, *Satyrus meadii* and *Chionobas chryxus*, illustrating eggs, larva, chrysalids and imagos. Mr. Edwards is to be congratulated in having reared *C. chryxus* successfully, and giving such a beautiful illustration of the life-history of a genus which so little had been known of the earlier stages previous to the publication of his work.

Proceedings of the Zoological Society of London, 1890, pt. 4.—On the Heteromerous Coleoptera collected by Mr. W. Bonny in the Aruwimi Valley, by G. C. Champion.

West American Scientist, January, 1891.—A new Rhaphiomidas from California, *R. acton*, by D. W. Coquillett.

Proceedings of the Linnean Society of New South Wales, 2d series, vol. v, pt. 1st.—Contributions towards a knowledge of the Coleoptera of Australia, No. 6. New Lamellicornia and Longicornia, by A. Sidney Oliff. A revision of the Australian genus *Ogyris*, with description of a new species, by B. W. H. Miskin. Descriptions of hitherto undescribed Australian Lepidoptera (Rhopal.), principally Lycænidæ, by W. H. Miskin. Diptera of Australia, pt. 8, the Tipulidæ longipalpi, by Fred. A. A. Skuse. Note on *Danais petilia* Stoll., by H. H. Miskin. Notes on Australian Coleoptera, with descriptions of new species, pt. 6, by Rev. T. Blackburn. Studies in Australian Entomology. No. 3.—On *Promecoderus* and allied genera (Carabidæ), by T. G. Sloane.

Biologia Centrali-Americana.—Coleoptera, vol. ii, part 1, by D. Sharp; vol. iv, pt. 3, by D. Sharp; vol. vi, p. 1; supplement, by M. Jacoby; vol. vii, by H. S. Gorham. Hymenoptera, vl. ii, by P. Cameron. Lepidoptera-Rhopalocera, vol. ii, by T. D. Godman and O. Salvin. Lepidoptera-Heterocera, by H. Druce.

Dreissigster Bericht des Naturwissenschaftlichen Vereins fur Schwaben und Neuburg (a. V.), 1890.—The macrolepidoptera of the vicinity of Kempten and Algaus: A contribution to the Bavarian lepidopterous fauna, by O. von Kolb, 2d edition.

Le Naturaliste, April 1, 1891.—Diagnoses of new Lepidoptera* by P. Dognin.

Materiaux pour la Faune Entomologique des Flandres Coleopteres, 4me Centurie, by A. P. de Borre.

Monitore Zoologico Italiano (Florence), II, No. 3.—On pseudoparasitism of the larva of the Mosquito (*Culex pipiens*), by R. Blanchard.

Biologisches Centralblatt, March 15, 1891.—The glands of the first abdominal segment of the insect embryo, by J. Carriere.

Notes from the Leyden Museum, xii, No. 4, October, 1890.—Description of two new species of the genus *Poteriophorus* Sch., of the family Curculionidæ,* by W. Roelofs. Description of a new species of Elateridæ,* by E. Candéze. Three new Malayan Longicorn Coleoptera,* by C. Ritsema Cz.

Journal de l'Anatomie et de la Physiologie Normales et Pathologiques de l'Homme et des Animaux, xxvii, No. 1, Paris, 1891.—Abstract genealogy of Arthropoda, by Dr. L. A. Segond.

Biologisches Centralblatt, April 1, 1891.—On the biology of Ants, by C. Emery.

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* Contains new species other than North American.

Compte Rendu. Societe Entomologique de Belgique, March 7, 1891.—Description of new Hesperidæ,* by P. Mabille; *Odina*, *Nyctus* n. gen.; *Carystus abalus* n. sp. Merida, Colombia. Descriptions of Coleoptera of the mountains of Kashmir (continued), by L. Fairmaire; *Helcophorus Saloninus* n. gen. Description of a new species of the genus *Lathridius* Herbst., M.-J. Belon. On some Histeridæ collected in Bengal,* by G. Lewis. Dascillidæ and Malacoderma of western Bengal,* by M. J. Bourgeois. Note on the Hemiptera of Bengal,* by L. Lethierry. Entomological miscellanies*: I. Phytophaga of the Isle of Java; II. New, or little-known Phytophaga,* by A. Duvivier; *Sikkimia* n. gen. New Buprestidæ and synonymic remarks,* by C. Kerremans.

Zoologischer Anzeiger, April 6, 1891.—On the development of the central nerve system in *Blatta germanica*, by N. Cholodkovsky. On the development of the wing nerves of butterflies, by Dr. E. Haase.

Atti del reale Istituto Veneto di Scienze, Lettere ed Arti, xxxviii, Venize, 1889–90.—Revision of the Italian Acarofauna: family Ixodini, by G. Canestrini; 3 plates; *Herpetobia* n. gen.

Entomologische Nachrichten, xvii, No. 7, April, 1891.—On the Orthopterous family of the Prochilidæ,* by Dr. F. Karsch; 4 figs., *Simodera*, *Mastighapha*, *Polycleptis* n. gen. On the fauna of Mecklenburg (Coleoptera, Lepidoptera), by H. Brauns. Miscellanea coleopterologica,* by C. Schaufuss.

Il Naturalista Siciliano, x, No. 4 (Palermo), 1891.—Note on the genus *Reicheia* Saulcy, and on a species of *Dichropterus* Ehlers,* by F. Baudi. Luminous insects, by L. Failla-Tedaldi.

Le Naturaliste (Paris), April 15, 1891.—*Colias Wiskotti* Staudinger, and its different varieties, by M. Austaut. Description of new Micro-Lepidoptera,* by P. Chretien.

Termeszetrajzi Fusetek (Budapest), xiii, Nos. 2 and 3, December, 1890.—First addition to the Monographia Chrysididarum Orbis Terrarum universi,* by A. Mocsary; Adelphinæ n. subfam., *Adelphe* n. gen., *A. mexicana* n. sp., Orizaba.

Bulletino della Societa Entomologica Italiana, xxii, Nos. 3 and 4, 1891.—New species of *Culex* from Zanzibar, by Dr. E. Ficalbi. New apparatus for the study of Entomology, by C. Emery. A zoological excursion to the Friulian Lakes, and The marriages of butterflies, by Dr. A. Senna. Diagnoses of new Arthropoda of Sardinia,* by A. Costa. Studies on Messinese Entomology: the Cleonidæ, by F. Vitale. On the odorant organs of the Lepidoptera of the Indo-Australian region after the studies of Dr. Erich Haase, by F. Plateau. Materials for a catalogue of the Italian Tenthredinidæ, by A. Berlese. Genesis of the silk worm, by N. G. Mukerji. On the pretended parasitism of the larva of *Culex pipiens*, by E. Ficalbi. Italian Entomological Literature; Entomological Bibliography, etc.

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* Contains new species other than North American.

SITZUNGSBERICHTE, D. KAIS. AKADEMIE DER WISSENSCHAFTEN (Wien) MATHEMATISCH-NATURWISSENSCHAFTLICHE CLASSE, xcviii, heft 4-7, '89, xcix, heft 1-3, 1890.—Monograph of the digging wasps allied to *Nysson* and *Bembex*,* by A. Handlirsch, parts iv and v, 3 plates; ***Bembidula diodonta***, Orizaba, ***B. insidiatrix***, Ky., Tex., ***B. capnoptera***, id. and Ga., ***B. fodiens***, Ga., Tex., ***Stenolia scolopacea***, Nev., Cal., ***S. tibialis***, id., ***Monedula vivida***, Mex., ***M. dives***, id., ***M. serrata***, Ga., ***M. inermis***, Ga., ***M. mammillata***, Ga., Va., Da.; ***M. minutula***, Tex., ***M. pulla***, Cal., new North American species.

DENKSCHRIFTEN of the preceding, lvi, 1889.—Comparative studies on the embryology of insects, and especially Muscidæ, by V. Graber, plates and figures.

ENTOMOLOGISCHE NACHRICHTEN, xvii, No. 8.—April, 1891.—A new contribution to the knowledge of the indigenous Coleoptera of Bucovina, by C. v. Hormuzaki. On the fauna of Mecklenburg (Hymenoptera), by H. Brauns. Physiological notes (Coleoptera, Hymenoptera), by C. Verhoeff.

SPECIES DES HYMENOPTERES D'EUROPE ET D'ALGERIE, fondé par Edmond André et continue sous la direction scientifique de Ernest André, 38e fascicule, Gray, April 1, 1891.—Braconidæ (continued), by Rev. T. A. Marshall.

COMTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, April 5, 1891. —Descriptions of new Hesperidæ (third part),* by P. Mabille; ***Pamphila subsordida***, Honduras; ***P. puxillius***, Mexico; ***P. asema***, Honduras; ***P. parilis***, id. ***P. binaria***, Merida; ***P. portensis***, Porto Rico; n. sp. from North America. Coleoptera from the interior of China* (seventh part), by L. Fairmaire; ***Hypochrus***, ***Hecatomnus***, ***Cyrebion***, ***Ariarathus***, ***Lagriogonia***, n. gen. Provisional list of the Coleoptera Heteromera of Belgium, by L. Coucke.

LE NATURALISTE (Paris), May 1, 1891.—Insects injurious to the maritime pines imported into the bay of the Somme, by M. Decaux. Diagnoses of some Heterocera from Venezuela, by P. Dognin.

L'AUXILIAIRE DE L'APICULTEUR (Amiens), April, 1891.—Raising bees under the influence of violet light, by A. Teynac. General notions on the nature and physiology of the Bee, by G. Ulivi.

## Doings of Societies.

A REGULAR MEETING OF THE ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES was held Wednesday, April 23d, Dr. Horn, Director presiding. Members present Martindale, Skinner. Associates Westcott, Nell, Calvert and Dr. Castle. Letters were read from

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* Contains new species other than North American.

Dr. Henri de Sassure and the Imperial Academy Leopoldino-Caroline. Mr. Martindale reported the capture of butterflies and moths. A letter was read from Mr. W. J. Fox, dated Kingston, Jamaica, April 15th, in which he said he and his companion, Mr. C. W. Johnson, were having fair success in collecting insects on the island. They expected to go to Port Antonio and remain there until May 7th, when they would leave for home.

HENRY SKINNER,
*Recorder.*

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON.—December 4, 1890. The corresponding secretary read a paper by Mr. P. R. Uhler entitled, "Observations on some remarkable forms of Capsidæ," in which were described two new genera, *Heidemannia* and *Peritropius*, represented by one species each, viz., *H. cixiiformis* and *P. saldæformis*. The paper also contained a note on the recent discovery by Mr. Heidemann, in the District, of one of Say's long-lost species, *Cylaphus tenuicornis*.

Mr. Howard read a paper on the "Parasites of the Hemerobiinæ," in which, after dwelling on the numerous protective characters of this subfamily of neuropterous insects, he spoke of the known hymenopterous parasites, and added the encyrtid genus *Isodromus* as the only known primary parasite in the country with the single exception of the egg parasite mentioned by him on page 10, Vol. I, of the society's proceedings. Several secondary parasites were mentioned, and a list of the European parasites and hyper-parasites was given.

Mr. Marlatt presented a note in which he proposed the specific name *unicolor* for a species of *Monoctenus*, the larva of which feeds on the Red Cedar. This Saw-fly had been described by him as *M. juniperi* (see Trans. Kans. Acad. of Sciences, Vol. X, p. 82), which name was preoccupied by an European species of the genus.

Mr. Banks read a paper on *Thalmia parietalis* Hentz, a spider which he had taken in Texas, and which had been lost since Hentz's time. In studying this species in connection with the Pholcidæ, Scytodidæ, Filistatidæ, Urocteridæ, Euyoidæ and Hersilidæ, he reached the conclusion that these spiders are closely related, and ought to be included in one group of family importance for which he proposes Duges' name Micrognathes changed to Micrognathidæ.

Mr. Townsend read some notes on Tachinidæ *sens. lat.*, synonymical and critical, with particular reference to the confusion of the sexes by early describers. A good number of species were noticed and several new ones were described.

Prof. Riley read and commented on letters from Mr. Wm. H. Ashmead, now studying in Berlin, and Mr. S. S. Rathvon, of Lancaster, Pa. He then read a note on an exotic roach (*Ponchlora viridis?*) which he had recently received from Dr. C. F. Gissler, of Brooklyn, N. Y. The remarkable feature was that the roach was certainly viviparous, a habit believed not to have been hitherto recorded of any species of the family Blattidæ. Figures of the parent roach, and of its young greatly enlarged, were shown. Prof. Riley gave an account also of his additional study of Platypsyllus, in which he mentioned the discovery of a large number of insects, mites and centipedes, which are associated with the beaver either accidentally or as parasites or guests. He also mentioned the undetermined larva described by Mrs. Julia P. Ballard in the October number of ENTOMOLOGICAL NEWS, p. 124, and said that he had no difficulty in recognizing the larva as that of *Citheronia regalis** G. and R. He then called attention to an interesting paper read by Prof. Forbes at the recent meeting of the Association of Economic Entomologists, relating to the periods of transformation, and to the specific characters of Lachnosterna larva. These matters were discussed at considerable length by Prof. Riley, and two new parasites of Lachnosterna were added to those hitherto known.

Mr. Schwarz presented a note "On the feeding habits of Empidæ," in which he described the habits in this regard of a species of *Synecdhes simplex ?* which was very abundant in the mountains at Ft. Pendleton, Md., during the first part of July. Their vertical position in flight and peculiar method of holding their prey and of hanging by one fore-leg while devouring it, were described. He also discussed the recent publication by Ed. Fleutian and Sallé on the Coleoptera from the island of Guadalupe, West Indies (Ann. Soc. Ent. de France, 1889, 1890). The relation of the species enumerated to the fauna of the United States was particularly dwelt upon.

C. L. MARLATT,
*Recording Secretary.*

## OBITUARY

Prof. JOSEPH LEIDY, M.D., died April 30, 1891, aged 68 years. Dr. Leidy always took a warm interest in Entomology, although his writings on the subject were principally connected with the anatomy of insects. Among his very first contributions to science was an article on the Mechanism which Closes the Membranous Wings of the genus *Locusta* (Proc. Acad. Nat. Sci. 1846). Then came the important contributions, "History and Anatomy of the Hemipterous genus *Belostoma* (1847)," and the "Internal Anatomy of *Corydalis cornutus* in its three stages of existence (1848)." He collected micro-lepidoptera in his earlier years, and there are many specimens in the collection of the Entomological Section of the Academy of Natural Sciences, which he presented. Dr. Leidy was elected a member of the American Entomological Society, Feb. 8, 1864.

ENTOMOLOGICAL NEWS for May was mailed April 27, 1891.

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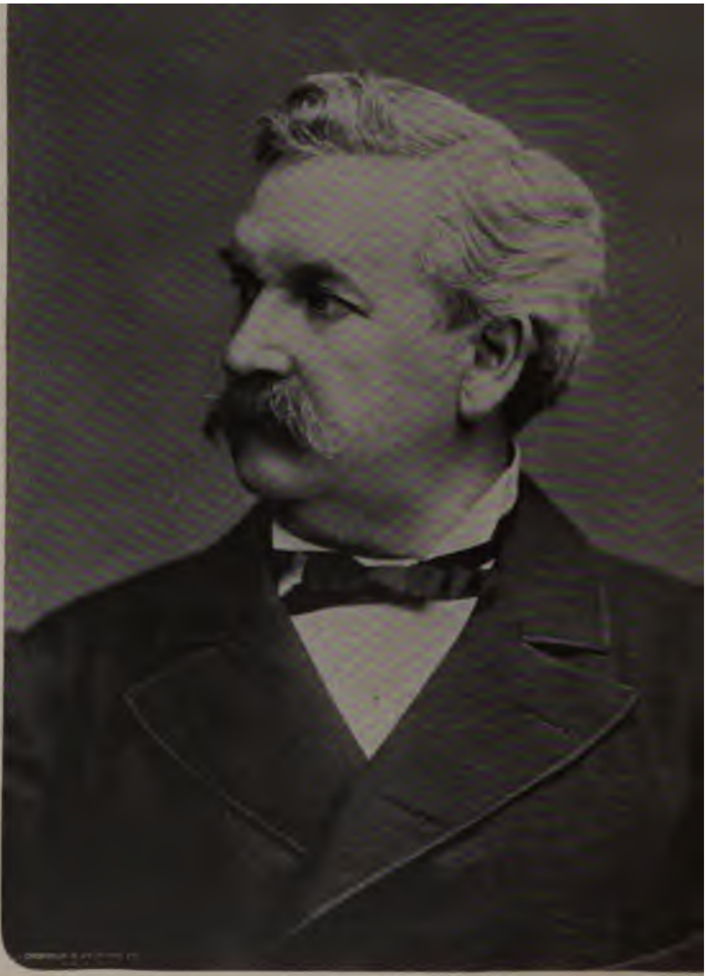
* *C. sepulcralis?* —ED.



HENRY EDWARDS.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. SEPTEMBER, 1891. No. 7.

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## HENRY EDWARDS.

HENRY EDWARDS, the well-known entomologist and actor, died in New York, June 9, 1891. He had been ill for a couple of months previous, and the immediate cause of death was heart failure, due to dropsy. Mr. Edwards was an Englishman by birth, and first saw the light in Herefordshire, England, in 1830. He studied law in early life, but a fondness for commercial enterprise led him into a London counting-house, where Walter Montgomery and John L. Toole were fellow clerks. Amateur acting engrafted professional endeavor, and in connection with Montgomery, Mr. Edwards made his first appearance as "Rudolf," in Byron's *Wonder*. In 1853 he bade farewell to the desk and sailed for Melbourne. Under Mr. Doubleday's auspices he had already commenced the pursuit of insect hunting, and had formed the nucleus of a collection destined to grow in a manner of which he had never dreamed. Mr. Edwards was well known as an actor, having been with different companies in Australia, Peru, Panama, California, Boston, etc. In 1879 he was engaged by the late Lester Wallack as a member of his stock company, and became stage manager of the theatre. After the disbandment of the Wallack company he again went to Australia as a manager for A. M. Palmer's *Little Lord Fauntleroy* organization, returning last year to join Augustin Daly's company. His last appearance was in New York in the part of "Sir Oliver" in *The School for Scandal.*

As an entomologist, Mr. Edwards will best be remembered by his work on the Lepidoptera of California and the Pacific coast, "Studies on North American Aegeridæ," and his last important contribution, "Bibliographical Catalogue of the described Transformations of North American Lepidoptera." He was a member of many scientific societies, and had many friends and correspondents. Three volumes of "Papilio" were edited by him, after which it passed into the hands of Mr. E. M. Aaron. We present a fine portrait of Mr. Edwards, knowing that he had many correspondents that admired and loved him, yet never had the pleasure of seeing his face.

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## THROUGH THE PINAL MOUNTAINS.

By H. F. WICKHAM, Iowa City, Ia.

A week spent in collecting beetles in the Pinal range of mountains proved so enjoyable that the writer feels tempted to write a short account of one of his trips, in order to try to impart to the readers of ENT. NEWS some small part of the pleasure to be gained in the retrospect. In truth, the life of the professional collector in an unsettled or sparsely inhabited country, does not partake to any great extent of the nature of a picnic, as some would have it—hard work, and plenty of it, is his portion when in the field.

The range mentioned may be found on any good map of Arizona, and lies north of Tucson, that part of it which we collected over being included between the Gila and Salt Rivers. To be more exact, our route lay over an old trail from the Gila River, up the cañon of Mineral Creek for some distance, thence across the foot-hills and over the summit of the range, descending on the other side to the mining town of Globe. This course, taking us through several quite distinctly marked belts of vegetation at various altitudes, proved quite productive of insects.

The start was made on horseback, and for a little while most of the attention had to be directed towards the burros, to whose backs the pack had long been a stranger. But with increased sobriety in the burros came increased opportunity for collecting, and we soon had some very pretty things in the cyanide bottle—the first captures being a set of one of our prettiest Chrysomelids, *Urodera crucifera* Lec. They were taken on the wing, having evidently been disturbed by the irresponsible pack animals brushing against the shrubs by the sides of the narrow trail. A few examples of *Megalostomis subfasciata* Lec. were added to our collections in the same way.

Stopping for a mid-day lunch at an abandoned stamp-mill, where a well yielded water enough for the animals, we made a hasty examination of the vicinity with the following results: *Amara californica* and a *Blapstinus*, in great numbers under leaves of Cottonwood, which had drifted into little hollows, a few *Monocrepidius* and an *Esthesopus* or two under boards; one or two examples of *Mycocoryna lineolata* Stal. on weeds with *Exema conspersa*, and an occasional *Euryscopa* or *Pachybrachys*. Not very encouraging yet, but then there were the foot-hills just in front of us, rising one behind the other, each a little higher than the one before it, and covered, as far as we could see, with bear grass and mescal, the latter with its great clusters of yellow, strong-scented flowers lifted high above our heads. On these we hope to find many an interesting insect, and we are not disappointed. First we see one of those curious weevils, *Zygops seminiveus* resting near the end of a mescal leaf, but he loses hold and rolls down the inclined surface until stopped near the axil by the base of the leaf above. As the leaves are very large, stiff, and armed along the edges with stout, curved spines or thorns, it is a delicate piece of work to extricate an insect without lacerating the hand badly, and possibly my method may prove useful to others who have no cutting tool with them but a jack-knife. Cut off the terminal spine first, then run the knife along the full length of the leaf, far enough from the margin to take all the other spines off clean. Now, treat all the other leaves in the same way and the insects are at your mercy. The *Zygops* may be chased from one leaf to another, for they are rather nimble, until in a spot where they can be grasped with the fingers or forceps. Many other beetles are found near the base of the stalk, either hiding in the axils of the leaves or burrowing in the stalk itself. Among them are the following: *Philophuga amoena*, *Carpophilus floralis*, *Clerus spinolæ*, *Tragidion* sp., *Mecysmus angustus*, *Hymenorus confertus*, *Hyporhagus gilensis* and *Scyphophorus acupunctatus*, the last named boring in and around the bases of the flower-stalk and leaves. At about this altitude we find *Asida parallela* under dead, uprooted plants. The bear-grass furnishes a few examples of *Megalostomis*, and an occasional *Urodera*.

Entering the belt of oak scrub higher up the fauna changes, and the most striking species are small insects living on the leaves, or predaceous; some of them are *Lebia viridis*, *Scymnus marginicollis*, *S. pallens*, *Anthaxia flavimana*, *Pseudebæus bicolor*, *Attalus difficilis*, *Chlamys polycocca*, *Pachybrachys abdominalis*, *Cryptocephalus* n. sp., *Babia tetraspilota*, *Diachus auratus*, *Xanthonia villosula*, *Hemiphrynus intermedius*, *Notoxus bifasciatus*, two or three species of *Apion*, and *Smicronyx seriatus*. These are not all confined exclusively to oak, and some of them probably do not live on it at all, but they may be taken by beating the shrubs, which are in great part some species of oak. On a Leguminous plant (probably a locust) many specimens of a queer ittle Rhynchophore, *Tachygonus centralis*, were captured. The hind legs are strong and saltatorial, though the insect is not as accomplished a jumper as most of our Halticini. At dusk a *Listrochelus* or two, and a single *Polyphylla*, came flying past and were added to the spoils.

After reaching the pine belt proper, there is still another change in the fauna. Here, under logs and slabs, are to be found *Pterostichus lustrans*, *Calathus dubius*, *Platynus brunneomarginatus*, *Chrysomela auripennis*, *Eleodes carbonaria*, *extricata*, *gentilis*, *Embaphion contusum*, *Coelocnemis punctata*, *Asida macra* and others, while along the little shaded streams *Rhyncheros sanguinipennis* may be seen flying. In and around the piles of slabs left by the lumbermen are numerous lignivorous beetles—*Lucanus mazama*, *Ergates spiculatus*, *Cacebara longula*, *Cossonus crenatus*, *Pityophthorus nitidulus*, *Tomicus confusus* and *Hylastes gracilis*. From the small pines and other evergreens a few *Chrysobothris cuprascens* and a *Magdalis* were taken by beating.

Sifting dead leaves in damp places yielded a lot of *Trichopteryx hornii* and *Quedius desertus*. In the little pools were plenty of

*Hydroporus vilis* and *Agabus lugens*, with occasionally an example of some rarer forms, and on the banks a number of *Bembidium mexicanum*, a not particularly agile species in that climate.

The spot was left with considerable regret, though a scarcity of provisions in the commissary department made this more necessary,—and if the specimens were not so numerous as might be, they were of sufficient interest to more than compensate for any failings in point of numbers.

## Notes on Colias cæsonia.

By Prof. R. R. Rowley, Curryville, Mo.

Although *cæsonia* is the rarest species of *Colias* in Missouri, yet it is fairly common some years, especially in localities where its food-plant is abundant. Toward the latter part of May I have taken numbers of it at red clover blossom in July, and August at thistle and milk-weed blooms, and late in Autumn on the flowers of red and white clover. It is as easily taken as *Philodice* or *Eurytheme*, with both of which it associates at flowers, but unlike the males of them, it never frequents damp places, so far as my observations go.

The flight of this butterfly is not noticeably different from that of our other two species of *Colias*, yet the experienced collector is able to detect it on the wing among numbers of other Coliads, even at a considerable distance; the very broad and intensely black border, outlining the peculiar "dog's head" on the top of the primaries, together with the pointed apex of the same wings, doubtless aiding most in the identification. At rest, the roseate underwinged females of October may be known a hundred yards away in a clover-field. The females of the early and midsummer broods differ from those of late Summer and Autumn in the very pale yellow, almost white, color of the underside of all the wings. In August this pale yellow deepens, and in early September reddish streaks appear along the veins of the hind wings beneath, while in October the entire under surface of the secondaries and the tip of the primaries are heavily streaked or solidly red. The broad outer border of black in some females contains a few, more or less distinct, yellow spots, as we see in the female *Eurytheme* or *Philodice*, but a majority of the individuals entirely want these spots, although the border is much less intense than in the males.

The color of the underside of the wings of the male is much deeper in Autumn than in early Summer, being a light orange, and on the upperside of the primaries the fresh males of October have the black outside border well covered with a beautiful dusting of red scales. In examples of August males but a few scattered (red) scales are to be observed, while a careful examination of many specimens taken in early Summer failed to show to the writer a trace of this Autumn feature. However, hand-bred specimens might show it, but as I have reared only late Summer larvæ, I cannot settle the question. Near the base of the front margin of the hind wing in the male is a large, oblong, orange-colored spot of a mealy appearance. I have noticed the same on the male of *Colias eurydice.*

One female, taken in August several years ago, has the ground color of the upperside of the front wings white, an approach to the albino, while on the upperside of the hind wings of many of the October specimens, the dark streaks and shades from the black border reach almost to the base of the wings.

I made the discovery of the food-plant of *cæsonia* a number of years ago by watching a female flitting about some bushes. The eggs of this butterfly are laid on the underside of the tender end leaflets of *Amorpha fruticosa* or "lead plant." They are spindle-shaped, white or pale yellow, growing darker before hatching. The young larva is yellowish green, swollen slightly at the head and thoracic rings and tapering to the anal extremity. After the last molt many of the larvæ become cross striped, while others are almost unadorned. Of the two kinds of grown larvæ, the one I shall designate No. 1 is dark green, with a lateral yellow or white line along the spiracles. An orange band almost entirely covers the pale yellow line, being broadest and most distinct in the middle of each segment. A bluish tinge above and below the stripe is usually noticeable.

The underside of the body is paler than above. On rings 3 and 4 is a black dot, each, just above the stripe. Head green, and covered with short hair. Feet green; whole body covered thickly with small, raised black points. Each ring many wrinkled. Length of mature larva 1¼ to 1½ inches.

The larva No. 2 differs from No. 1 in the cross-bands of black and bright yellow on each segment, reaching the yellow longitudinal line below, and giving the larva a handsome striped appearance. The black cross-bands are either entire or broken into four parts, following the yellow bands as shades to each. Some larvæ have the yellow without the black bands, while a few have the black without the yellow. The pupa is three-fourths of an inch long, plain green, with a pale lateral line. A row of small, dark dots along each side, on the back, and a submarginal row on the wing-cases. Length of pupal period in August is from four to six days. Later in the year it is much longer. Wing-sheaths of pupa humped. Two days before the pupa gives the imago the wings show plainly in miniature, and the dark border of the mature butterfly is here represented by a bright red band, the male being readily distinguished from the female.

I doubt if this species feeds on any other plant than *Amorpha*, as I have never observed the female depositing her eggs on anything else, though many other Leguminous herbs, shrubs and trees grow here.

Even the larger and older shrubs of *Amorpha* do not seem to be inviting to the female, and she frequents fields where the brush has been newly cut away from the banks of brooks, and fresh, tender shoots offer a supply of suitable food for young larvæ. Here she deposits her eggs in great numbers, and here the collector finds a supply of larvæ. Besides *cæsonia*, the caterpillars of *Eudamus tityrus*, *Hyperchiria io;* an undetermined *Limacodes* and another moth feed on *Amorpha fruticosa*, a very abundant shrub along the prairie branches near Curryville.

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## Lachnosterna insperata and fraterna.

By JOHN HAMILTON, Allegheny, Pa.

**Lachnosterna insperata** *Smith.*—The distribution of this species is widely extended; examples are in my collection from Sudbury, Ontario; Buffalo, N. Y.; and from here, as likewise from various places in western Pennsylvania and eastern Ohio. Prof. Smith has it from New Jersey and from Illinois. The ventral characters of the male are variable; the form of the ridge on the penultimate ventral segment of Mr. Smith's type seems to be an extreme in one direction, varying in a large majority of the individuals to that of *dubia*, and an example occasionally occurs which inosculates so closely with some *fuscæ* as not to be separable by this character. The typical *insperata* has been in my collection from its first description, but the great mass of the examples were referred to *dubia* without a suspicion. There are before me now forty male and twenty female *insperata*, and ten male and sixteen female *dubia*. By an examination of this series it is easy to see the males of these two species cannot in every case be separated by the ventral characters—that is to say, the writer cannot do it. The genital organs are usually sufficiently distinctive, but to examine every specimen in this way is laborious. The claspers in this species vary greatly in the development of some of the parts, but in all cases observed always retain the same pattern. As to the females, the ventral characters appear to be identical; the last ventral in each is deeply arcuately emarginate, differing from that of *fusca*, which is either transverse at the apex, or scarcely narrowed at its middle; the genitalia, while morphologically different, are yet so similar as to be of little practical avail to the collector. The two species are, however, readily separated by a character of *insperata* not heretofore observed, or at least not recorded (unless *insperata* should prove to be a synonym), namely, the hairiness of the head.

In the males there is conspicuous tuft of long yellow hairs on the front near each eye connected by a line of shorter hairs, which appear to be somewhat deciduous, and in some old examples are nearly lost. In the females the tufts of hairs near the eyes are usually shorter, and in many old specimens may, without care, escape observation, while the connecting line is scarcely present, except in immature or very recent examples.

The females were obtained years ago from two exchanges, labeled *cephalica* Lec., a species described as having 10-jointed antennae and a hairy head, but placed by Dr. Horn in his recent monograph as a race of *fusca*. As *insperata* is quite variable in the ventral characters of the male as stated above, it seems probable it may be Dr. LeConte's *cephalica*, a matter that might easily be settled by examining the genitalia of the type, a male, which probably still exists in Dr. LeConte's collection. In case they prove to be different, *cephalica* will likely be rehabilitated as a species and grouped with *insperata*.

**L. fraterna** *Harris*.—This species is abundant here, when its locality is found; last season I took near two hundred examples in a couple of nights' collecting. The figure given by Professor

Smith in his plates of genitalia as the female of this species, is that of *nova* Smith: that of *fraterna* is still unfigured. The pubic process might be likened to a miniature spoon truncated near the tip with the handle much curved and shortly furcate at the end.

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## ELEMENTARY ENTOMOLOGY.

The young of butterflies and moths are called caterpillars, larvæ or worms. Lepidopterous insects can only be said to grow in the caterpillar condition, and little butterflies never grow to be big ones, as is popularly supposed. When the young caterpillar has matured in the egg it eats its way through the shell and devours more or less of the remaining shell; some species eat a hole only large enough to let them out, and others nearly the entire shell. Some are very slow in eating their way out, sometimes occupying a day or two, as in some of the Hesperidæ. The newly-born caterpillar varies in size from a very minute object to about one-quarter inch in length, according to the size of the species. They are very voracious, and grow rapidly, changing their skins or moulting to accommodate their increase in size. They are elongated, cylindrical, worm-like; some are naked and others covered with hair. They are separable into thirteen joints or segments, including the head. They have three pairs of short legs, a pair on the second, third and fourth segments respectively, and on joints seven, eight, nine, ten and thirteen have each a pair of membranous legs armed with a circle of minute hooks which enables them to hold on to objects. In certain large species these are wrapped entirely around a small twig or branch of the tree on which they feed. These last legs disappear when the larva changes to a chrysalis. They breathe by means of stigmata or spiracles, which are breathing holes situated on each side of the body, which communicate with the respiratory system. When, after feeding some days, the larva gets too big for his skin he seeks a convenient place and spins a little web, in which he entangles his feet and remains quiet for a short period, and then crawls out of the old skin and has an entirely new suit of clothes, often varying greatly from the old one. This he does a varying number of times according to the species, but it is usually four or five, but may be as high as ten. Some of the species of *Pam-*

*phila* undergo this change in a little tube of silk, which they spin for the purpose. When the caterpillar reaches full growth it seeks a place in which to change into a chrysalis or pupa. Some species change to a naked chrysalis; some spin a cocoon inside of leaves or sticks; others make merely a cocoon in which to transform, and quite a number enter the ground and wriggle around until they harden the sides of their grave or tomb until it is virtually a cocoon in the ground.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

**In the future all papers received for publication in the News will be printed according to date of reception.**

EXTRAS of Plate VI (portrait of Henry Edwards), on heavy paper suitable for framing, can be supplied at twenty-five cents each. Send order to Treasurer, E. T. Cresson, P. O. Box 1577, Philadelphia, Pa.

THE new Check List of North American Lepidoptera by Prof. J. B. Smith, will soon be completed. This includes Diurnals and Nocturnals. The price will be $1.00. Send in your order early to E. T. Cresson, Treasurer. See notice on second page of cover.

INTERNAL REVENUE PROBLEMS.—Truth is often much funnier as well as stranger than fiction. An important public officer of Duisberg, in Germany, is an ardent entomologist, and made a costly purchase of rare butterflies in Holland. The collection arrived in due time at the Duisberg custom-house, where the inspectors were at a loss to know whether the insects were dutiable or not. They finally came to the conclusion that, inasmuch as they had wings, they must be classed as poultry, and much explanation and expostulation were required before they could be induced to regard them in any other light.—*Clipping.*

THE collection of insects made by the late Henry Edwards, consisting of about 300,000 specimens of all orders, and well represented in large numbers of individuals and long suites of specimens from all parts of the world, is for sale. It is particularly rich in Pacific coast of North America species. A large number of Lepidoptera from this region were described by Mr. Edwards, and his types are in the collection. Institutions or private persons wishing to purchase will please address Mrs. Henry Edwards, 185 E. 116 Street, New York, N. Y.

ON May 29th, near midnight, with temperature at 50° Fahr. at Franconia, N. H., Mrs. A. T. Slosson took another fine ♀ specimen of *Phragmatobia assimilans*, var. *franconia* Slosson.

THE Entomological Society of Belgium, at its meeting of May 2, 1891, discussed the question of the value of types in Entomology. The majority of the members present expressed their ideas on the subject. The result of the discussion was that *only those specimens should be considered as types of a species which have served to fix the description.* All the individuals which an entomologist afterwards recognizes as belonging to a species established by him are not veritable types; they ought to have in a collection only the note *compared with the type by the author* with the date of the determination.—From the Compte Rendu. of the Society for May 2, 1891, p. ccxlvi.

THE annual field-meeting of entomologists, under the auspices of the societies of Philadelphia, Brooklyn and Newark, was held on July 4th at Jamesburg, N. J., which is situated near Monmouth Junction on the Amboy Division of the Pennsylvania Railroad. The societies represented were the Feldman Collecting Social, American Entomological Society and Entomological Section of the Academy of Natural Sciences, all of Philadelphia; the Brooklyn Entomological Society and the Newark Entomological Society. It was feared that the hail storm of the previous evening would somewhat interfere with the pleasures of the day, but the bright sunshine of the early morning brought sunshine into the hearts of the ardent collectors, for Jamesburg is well known to be a favorite collecting-ground. The party was met at the Jamesburg Station by conveyances and taken about a mile to a beautiful grove, bordering the cranberry meadows, where, after a photographer had secured a picture of the entire party, the day was spent in collecting. Ample lunch was provided and eaten under the shade of the trees in the pretty grove. About forty persons were present, among whom were H. Wenzel, P. Laurent, Dr. Castle, Schmitz, Trescher, Hoyer, E. Wenzel, C. Boerner, I. C. Martindale, Liebeck, Fox, C. W. Johnson, P. Nell and H. Skinner, of Philadelphia; Jas. S. Johnson, of Frankford, Phila.; and Messrs. Machesney, Angell, Loeffler, Angelman, Sherman, Thompson, Ottolengui, Leng, Merkel, Roberts, Pearsall, Davis, Baier, Hess, Dietz, Sieb and Julich, of New York, Newark and Brooklyn. The party was looked after by Prof. J. B. Smith, of New Brunswick, State Entomologist. The second annual meeting was a great success, and it is hoped that many more may follow.—I. C. MARTINDALE.

*The following are clipped from the daily papers:*

HOW TWO INSECTS TALKED.—A Parisian chemist has caught two little insects in the act of nocturnal "spirit" rapping. They were found about four inches apart on opposite sides of a piece of heavy wrapping paper. Each tapped loudly with the head about six strokes a second, one answering as the other finished.

AFRICAN travelers tell of a "delicious soup" of beetles and mushrooms made by the natives of that remarkable country.

THE fly is a quaint humorist. He can tickle a man in more places at once than the best paid funny man going.

Now fares it sadly with the man
Whose soul doth patience lack,
When he to smite fugacious flies
Himself doth fiercely whack.

A PROFESSOR at Ann Arbor was discussing the process of fertilizing plants by means of insects carrying the pollen from one plant to another, and told how old maids were the ultimate cause of it all. The bumble-bees carry the pollen; the field-mice eat the bumble-bees; therefore, the more field-mice the fewer the bumble-bees and the less pollen and variation of plants. But cats devour field-mice, and old maids protect cats. Therefore, the more old maids the more cats, the fewer field-mice, the more bees. Hence, old maids are the cause of variety in plants. Thereupon a sophomore, with a single eyeglass, an English umbrella, a box-coat, with his trousers rolled up at the bottom, arose and asked: "I sa-a-y, Professah, what is the cause—ah—of old maids, don't you know?" "Perhaps Miss Jones can tell you," suggested the Professor. "Dudes!" said Miss Jones, sharply, and without a moment's hesitation.

A YOUNG man camping in the Sierras discovered and captured a butterfly of an unknown species. He sent it to the Smithsonian Institution at Washington, and received therefor a check for fifteen hundred dollars, with the request to make careful search for other moths of the same kind. It was an individual of a fossil species, supposed to be extinct, and great was the excitement among the scientists at the discovery that one of the race had been recently alive. Although diligent search has been made by men paid for the service, no other specimen has been found.

"WILL you walk into my parlor?" said the spider to the fly
Well, hardly," said the insect, as he winked the other eye
"Your parlor has an entrance, but of exits it is shy,
So I'll stay outside in safety and remain a little fly"

"AN INNOVATION"—That was a great jewel Mrs De Jones had on last night "What was it?" "It was a live brazilian beetle with a big diamond strapped on its back It was trained to fly around her neck, thus giving the effect of a diamond necklace"

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions. 1st. The number of specimens to be unlimited for each sending. 2d The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society. 3d Each specimen must have a number attached so that the identification may be announced accordingly Address all packages to ENTOMOLOGICAL NEWS Academy Natural Sciences, Logan Square, Philadelphia Pa

# Entomological Literature.

ANNALS AND MAGAZINE OF NATURAL HISTORY, May, 1891.—Descriptions of new genera and species of Pyralidæ contained in the British Museum collection, by W. Warren. Descriptions of new species of the coleopterous genus *Oides*, by C. J. Gahan. Description of a new genus for the reception of the North American moths hitherto referred to *Telesilla* of Herrich-Schäffer, by A. G. Butler.

CONTRIBUTIONS TOWARD A MONOGRAPH OF THE NOCTUIDÆ OF TEMPERATE NORTH AMERICA.—A revision of the species of *Hadena* referable to *Xylophasia* and *Luperina*, by J. B. Smith.—From Proc. U. S. National Museum, vol. xiii, pp. 407–447.

THE TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON for the year 1891, pt. 2, with 8 plates.—A monograph of the Lycænid genus *Hypochrysops*, with descriptions of new species, by Hamilton H. Druce. Notes on the Lepidoptera collected in Madeira, by the late T. Vernon Wollaston, by George T. Baker. Additions to the Carabideous fauna of Mexico with remarks on some of the species previously recorded, H. W. Bates. On the genus *Xanthospilopteryx* Wallengren, by W. F. Kirby. The Rhynchophorous Coleoptera of Japan. Pt. 2, Apionidæ and Anthribidæ, by Dr. David Sharp. The life-history of the Hessian Fly, *Cecidomyia destructor* Say, by Fred. Enock. Mimetic resemblances between species of the coleopterous genera *Lena* and *Diabrotica*, by C. J. Gahan. A list of the Heteromerous Coleoptera collected by J. J. Walker in the region of the Straits of Gibralter, with descriptions of four new species, by G. C. Champion.

THIRD ANNUAL REPORT OF THE WEST VIRGINIA AGRICULTURAL EXPERIMENT STATION.—This contains a valuable report on noxious and beneficial insects of thirty-five pages with two plates, by A. D. Hopkins, entomologist to the station.

THE BRITISH NOCTUÆ AND THEIR VARIETIES, by J. W. Tutt, F. E. S., vol. i, May, 1891, with catalogue of the subclasses, families, genera, species, varieties and principal subvarieties. This is a work of 164 pages by one who has made a study of the causes of variation in Lepidoptera, a subject which of late has received considerable attention, especially in England. The literature of varieties had been greatly scattered through numerous periodicals and other works published in different countries, and in this volume there are collected together for ready reference by the student. A careful study and comparison of the different forms of a species can't fail to be very useful in determining their exact limitations and thus help to solve the problem as to what shall be considered a species. The subject of variation is rapidly acquiring a literature of its own, and the author of this work is also the editor of a journal entitled, "The Entomologist's Record and Journal of Variation." Mr. Tutt is anxious to correspond with any one in this country interested in the subject.

"THE OBSERVER," devoted to Natural History, Popular Science, Education and General Literature, edited by E. F. Bigelow, Portland, Ct. This interesting journal has a department devoted to Entomology under A. W. Pearson, of Norwich, Conn. Vol. ii, No. 7, contains a table of Geometridæ for determining the species, An editorial outing, an enemy of mosquitos. The price is fifty cents per annum.

MANUAL OF NORTH AMERICAN BUTTERFLIES, by C. J. Maynard (De Wolfe, Fiske & Co., Boston, 1891). This work brings together for the first time descriptions of all the butterflies which occur in America North of Mexico. The literature on Lepidoptera is so scattered that only those who have access to large natural history libraries, or are happy enough to own an extensive library of their own, can hope to identify their specimens for themselves, and this book is intended for those who do not have these facilities. All the species listed by Mr. W. H. Edwards in his catalogue of 1884 are described, and some of those described since are noted in an appendix. There are ten colored plates with about sixty figures and numerous wood-cuts of about two hundred and fifty species illustrating some peculiar character by which the insect may be known. The scheme of the work is a very good one, and it can't fail to be useful, although there are certain faults. Comparative descriptions are only of value when specimens are at hand, and it would be exceedingly difficult to identify from many of the descriptions without a large amount of material, which the beginner does not have. A number of errors have crept in, the most noticeable of which is on plate 5, fig. 1, which represents the underside of *Synchlœ janais* of Drury and not *adjutrix*.

DESTRUCTIVE LOCUSTS.—A popular consideration of a few of the more injurious locusts (or "grasshoppers") of the United States, together with the best means of destroying them, by C. V. Riley, U. S. Dep't Agric., Div. Ent., Bulletin No. 25.

REPORT OF THE ENTOMOLOGIST FOR 1890, by C. V. Riley, U. S. Dep't Agric., 26 pages, 7 plates. Contains articles on noxious insects, with remedies against them.

CENTRAL EXPERIMENTAL FARM, DEPARTMENT OF AGRICULTURE, Ottawa, Canada, Bulletin No. 11, May, 1891.—Recommendations for the prevention of damage by some common insects of the farm, the orchard and the garden, by James Fletcher, entomologist and botanist to Dominion Experimental Farms.

NOTES ON SOME NOCTUIDÆ, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES, by John B. Smith, pp. 103-135. From Trans. Am. Ent. Soc. for 1891.

BULLETIN 82, NEW JERSEY AGRICULTURAL EXPERIMENT STATION, by Prof. J. B. Smith. Experiments for the destruction of the Rose-chafer, or Rosebug.

REVISION OF *Homohadena* Grote, by Prof. John B. Smith. From Proc. U. S. National Museum, vol. xxiii, pp. 397-405.

HOST-PLANT LIST OF NORTH AMERICAN APHIDIDÆ, by T. A. Williams. Special Bulletin No. 1. University of Nebraska, Dep't of Entomology.

AN UNDESCRIBED LARVA FROM MAMMOTH CAVE, by H. Garman. From Bulletin of the Essex Institute, vol. xxiii, 1891.

U. S. DEPARTMENT AGRICULTURE, DIVISION OF ENTOMOLOGY, Bull. 23.—Reports and observations in the practical work of the Division made under the direction of the entomologist. Contains articles on injurious insects, by Lawrence Bruner, D. W. Coquillett, Albert Koebele, Mary E. Murtfeldt, Herbert Osborn and F. M. Webster.

NOTES ON NORTH AMERICAN MYRIAPODA OF THE FAMILY GEOPHILIDÆ, WITH DESCRIPTIONS OF THREE GENERA, by O. F. Cook and G. N. Collins, of Syracuse, N. Y. From Proc. U. S. National Museum, vol. xxiii, pages 383-396.

COLLECTING AND PRESERVING INSECTS, by Dr. W. J. Holland, 33 pp. with a number of plates and cuts. This comprises the article on insects in "Taxidermy and Zoological Collecting," by W. T. Hornaday. This article is by a practical entomologist, and will be a useful guide to the subject. Such articles are generally written by Taxidermists who know little about the subject.

ATTI DELLA SOCIETA VENETO-TRENTINA DI SCIENZE NATURALI RESIDENTE IN PADOVA, xii, fasc. 1, 1891.—Contribution to the embryology of the Acari, by Dr. E. Sicher.

SITZUNGSBERICHTE D. KONIG. BOHMISCHEN GESELLSCHAFT DER WISSENSCHAFTEN. MATHEMATISCH-NATURWISSENSCHAFTLICHE CLASSE, '90, II.—The metamorphic stages of *Oxyethira costalis* Curt., and a paper on Bohemian Trichoptera,* by F. Klapalek, plates; Bohemian Thysanura,* by J. Uzel.

JOURNAL DE L'ANATOMIE ET DE LA PHYSIOLOGIE, etc., Paris, xxvii, No. 2, 1891.—Brief genealogy of the Arthropoda: Determination of the typical forms (continued), by Dr. L. A. Segond.

BIOLOGISCHES CENTRALBLATT (Erlangen), May 1, 1891.—On the embryonal plan of the blood and fat tissues of insects, and remarks on J. Carriere's paper on "The Glands of the first abdominal segment of the insect embryo," by V. Graber.—July 1, 1891. Preliminary remarks on the "International Relations" of Ant guests, by E. Wasmann.

ZOOLOGISCHER ANZEIGER, May 11 and 25, 1891.—On the extremities in the embryos of Arachnids and Insects, by Dr. A. Jaworowski.

REVUE DES SCIENCES NATURELLES DE L'OUEST (Paris), No. 2, April, 1891.—The sense of sight in Arthropods, by Dr. A. Peytoureau.

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* Contains new species other than North American.

LE NATURALISTE (Paris), May 15, 1891, etc.—New Lepidoptera,* by P. Dognin; *Gaujonia* n. gen.—June 1. The nymph of *Telephorus rufipes*, by L. Planet; figs.

ENTOMOLOGISCHE NACHRICHTEN, xvii, No. 9, May, 1891.—*Brachycryptus* n. gen. Cistelidæ near *Omophlus*,* and A new *Glaphyrus* from Tripoli,* by G. Quedenfeldt. Triphonid studies,* by Dr. Kriechbaumer. A new contribution to the knowledge of the indigenous Coleoptera in Bucovina, by C. V. Hormuzaki.—No. 10, May: *Acronycta* var. *Bryophiloides*, a new variety of *A. strigosa* F.,* by C. V. Hormuzaki. A new Crabronid,* by C. Verhoeff.—No. 11, June: *Rhizotrogus limbatipennis* Villa = *furvus* Germar, by Dr. G. Kraatz. Cryptid studies,* by Dr. Kriechbaumer. A later contribution to the knowledge of indigenous Coleoptera of Bucovina, by C. V. Hormuzaki.—No. 12, June: Diptera from the vicinity of Treparewo, by B. Fedtschenko. Two new species of *Macrophya*, by Dr. Kriechbaumer.—No. 13 July: On *Dorcadion læve* Fald., by K. M. Heller. Diptera from the vicinity of Treparewo, by B. Fedtschenko.—No. 14, July: On *Orellia schineri* Lw., by V. v. Roder. On *Polyphylla*, *Anoxia* and *Cyphonotus*; Three new species of *Rhizotrogus* from the Orient;* On *Rhizotrogus ater*, *fuscus*, *furvus* and *limbatipennis*, by E. Brenske. The Zoocecidæ of Lorraine, by S. S. Kieffer.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE May 2, 1891. —Causeries Odonatologiques, No. 4: the genera *Zygonyx* Selys and *Schizonyx* Karsch, by E. de Selys-Longchamps. Description of a new genus of Elateridæ,* by E. Fletiaux; *Globothorax*. Additions to the "Catalogue Methodique des Elaterides connus en 1890, par E. Candèze," by E. Bergroth. Clavicorns from Western Bengal,* by A. Grouvelle. Melanges Entomologiques, III, Diagnoses of Madagascan Phytophaga,* by A. Duvivier. Second note on some Coleoptera Heteromera of Belgium, by L. Coucke.

ZOOLOGISCHE JAHRBUCHER, v, No. 5, Jena, 1891 —Contributions to the biology of the solitary flower wasps (Apidæ), by H. Friese; 1 plate.

ENTOMOLOGISKE MEDDELSER, ii, Nos. 5, 6, Copenhagen, '90.—*Phlœphthorus rhododactylus* Marsh, by E. A. Lovendal, figs. Synonymic remarks, etc., on Danish Tomicini, ibid. *Aenigmatias blattoides*,* a new apterous Dipter, by F. Meinert; 1 plate. Catalogue of Danish Coleoptera: Staphylinidæ, id. New Danish Coleoptera and Hemiptera, by W. Schlick. New Danish Lepidoptera, by H. P. Duurloo.

ABHANDLUNGEN, NATURWISSENSCHAFTLICHEN VEREIN ZU BREMEN, xii, No. 1, 1891.—Contributions to the fauna of the island of Spiekerooge, by S. A. Poppe. Biological observations on the relations between flowers and insects in the East Frisian Island of Norderney, by C. Verhoeff. First contribution to the insect fauna of the North Sea island of Juist, by Dr. Alfken.

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* Contains new species other than North American.

Bulletin de la Societe Philomathique de Paris, 3e serie, iii, No. 1, 1891.—On the locomotion of Arthropods, and Note on the lyriform organs of Arachnids, by P. Gaubert.

Archiv fur Naturgeschichte, lvii, I, No. 1, Berlin, 1891.—On the origin and cause of the absence of wings in the females of many Lepidoptera, by L. Knatz; 1 plate.

Bulletin de la Societe Linneenne de Normandie, 4e serie, v, 1, Caen, 1891.—Note on *Phalena hyemata*, parasite on the apple tree, by Drs. Huet and Louise.

Monitore Zoologico Italiano, ii, 5, Florence, 1891.—Anatomico-physiological note on some Ixodini, by A. Batelli.

Mittheilungen aus dem Naturhistorischen Museum in Hamburg, viii, 1891.—Revision of the scorpions, I. Fam. Androctonidæ, by Dr. K Kraepelin; 2 plates; new genera and species.

Archives de Biologie, x, 4, Paris, etc., 1891.—Researches on the walk of insects and Arachnids, by J. Demoor; 3 plates.

Compte Rendu. L'Academie des Sciences (Paris), July 6, 1891.—The Flight of Insects studied by Photochronography, by M. Marey.

Stavanger Museum, Aarsberetning for 1890, Stavanger, 1891 (?).—Contribution to the knowledge of Norse Coleopterous Fauna,* by T. Helliesen. List of Coleoptera (Carnivori, Palpicornes and Amphibii) found near Jaederen in 1890, id.

Verhandlungen des Naturhistorischen Vereins der Preussichen Rheinlande, Westfalens und des Reg.-Bezirk Osnabruck, xlvii, Bonn, 1890.—The gall-flies and galls of Siegerland,* by E. H. Rubsaamen; 4 plates. A fourth German species of *Atypus*, by Dr. P. Bertkau.

Sobre la Carpocapsa saltitans Westw. y la Grapholita motrix Berg. n. sp.* por el Dr. Carlos Berg.—Extract from Anales Sociedad Cientifica Argentina xxxi, 1891.

Revue Scientifique du Bourbonnais, 4e, Annee, No. 6, June, 1891.—The Orthoptera of the Allier, by E. Olivier.

Bolletino dei Musei di Zoologia ed Anatomia comparata d. R. Universita di Torino, Nos. 94, 97, 102, 1891.—New species of Diptera from the Zoological Museum of Turin,* by Dr. E. Giglio-Tos; No. 102 contains twelve new Mexican species of various genera.

Mittheilungen der Naturforschenden Gesellschaft in Bern, Nos. 1244-1264, 1891.—Contribution to the Tipulid Fauna of Switzerland,* by Dr. E. Bergroth.

Utilite des Abeilles en Horticulture; par V. Brandicourt, Amiens, 1891.

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* Contains new species other than North American.

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), June 20, 1891.—On th abdominal nerve chain of *Melolontha vulgaris*, by A. Binet. Fungi pa sitic on *Acridium*, by J. K. d'Herculais, C. Langlois, A. Girard. July The disposition of the connectives in sub-intestinal nerve chain of *Me lontha vulgaris*, by A. Binet.

ARCHIVES ITALIENNES DE BIOLOGIE, xv, 2, Turin, 1891.—Sperm genesis of *Bombyx mori*, by E. Verson. The glandular hypostigm cells in *Bombyx mori*, by E. Verson and E. Bisson.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, iii, 10, July, 1891.— wax of Bees, by A. and P. Buisine.

IL NATURALISTA SICILIANO (Palermo), x, 6, 7, March, April, 1891.—T new Hymenoptera from Sicily, by T. De-Stefani. Catalogue of the leoptera of Sicily, by E. Ragusa.

VERHANDLUNGEN DES NATURFORSCHENDEN VEREINES IN BR xxviii, 1890.—Identification table of the Hydrophilidæ of Europe, W Asia and North Africa, by A. Kuwert.

JENAISCHE ZEITSCHRIFT FUR WISSENSCHAFT, xxv, 3, 4, Jena, 1891. Honeydew: A biological study on plants and plant-lice, by Dr. M. Büsge 2 plates.

ARBEITEN AUS DEM ZOOLOGISCH-ZOOTOMISCHEN INSTITUT IN WÜR BURG, x, 1, Wiesbaden, 1891.—On the genital characters of insects, by Leydig; 2 figures.

ARBEITEN AUS DEM ZOOLOGISCHEN INSTITUTE DER UNIVERSITAT WI UND DER ZOOLOGISCHEN STATION IN TRIEST, ix, 2, Wien, 1891.—T coxal glands of the Arachnoidea, by R. Sturany; 2 plates.

BIBLIOTHECA ZOOLOGICA II: Verzeichniss der Schriften über Zoolo welche in den periodischen Werken enthalten und vom Jahre, 1861–18 selbstandig erschienen sind, . . . von Dr. O. Taschenberg, 9te lieferu signatur 321–360, Leipzig, Engelmann, 1891.—A list of the writings Zoology from 1861 to 1880, which have appeared separately or in perio cal journals. This lieferung finishes the insects (Coleoptera), includes Molluscoidea, and begins the Mollusca.

MATERIAUX POUR LA FAUNE ENTOMOLOGIQUE DU LIMBOURG. CO OPTERES, 4me Centurie, par A. P. de Borre, Hasselt, 1891.

## Doings of Societies.

A REGULAR STATED MEETING OF THE ENTOMOLOGICAL SECTION THE ACADEMY OF NATURAL SCIENCES was held at the Hall, S. W. Nineteenth and Race Streets, May 28, 1891, Dr. Horn, Director, in chair. Members present: Cresson, Martindale, Laurent, Skinner, Bull and Ridings; Associates: Seeber, Johnson, Fox, Westcott and Nell; Bird, of Rye, N. Y., visitor. A paper entitled, "Revision of the genera species of Anthonomini of Boreal America," by W. G. Dietz, M.D., was presented for publication. Mr. Martindale stated that five volumes of Kirby's Catalogue of Heterocera were in press. Dr. Skinner spoke of the importance of the work, and said it would greatly stimulate the study of the moths. Mr. Martindale also discussed the question of the proper classification of Diurnal Lepidoptera, and mentioned some of the classifications now in use. Dr. Horn said that a working collection should be arranged for convenience of study. Dr. Skinner exhibited a caterpillar and chrysalis of *Danais archippus;* the former transformed into a chrysalis during the meeting. Mr. C. W. Johnson, exhibited the Diptera which he had recently collected in Jamaica. He had found different species represented on the north and south sides of the island. Some of the species captured he had also taken in Florida. Insect life was scarce at Kingston on account of the dry weather, but insects were more abundant at Port Antonio, where the rainfall is usually greater. The natives stated that collecting was best during the month of July. He took about ninety-seven species, which were exhibited. Mr. W. J. Fox exhibited the Hymenoptera collected in Jamaica; they numbered ninety-one species, fifteen of which were probably new to science. One torn specimen of *Papilio homerus* had been seen. Mr. Martindale read an extract from a paper by Dr. Leidy, published some years ago, on "Insects Injurious to Shade Trees." He also spoke of the scarcity of insects at the present time. Dr. Horn stated that he was about finishing his paper on *Agrilus.*—Meeting held June 8th, Dr. Horn presiding. Members present: Ridings, Bullock, Blake, Martindale, Skinner; Associates: Calvert, Fox, Westcott, Johnson, Nell. A paper on Jamaica Hymenoptera by Wm. J. Fox, was presented for publication. Dr. Horn stated, in regard to his paper on *Agrilus,* that he had about decided to discard a certain species from the list, specimens of which were in the collection of the Society and his own received from the late Mr. Wilt. Having received the same species from Dr. Riley, with the authentic label Florida, it must be included. He had at first thought the species, from its appearance, was probably exotic. He also mentioned seeing in Mr. Seeber's collection a specimen of *Agrilus walsinghami* labeled Texas, and doubted the locality being correct, as the home of the species was in the Northwest. He had recently received specimens from some of the intermediate points, thus showing that the southern locality was probably correct. Mr. Martindale spoke of a note in the June number of the News, p. 122, that *Psyche confederata* had been found in abundance at Columbus, Ohio, by Prof. Kellicott. Mr. M. had found it in some numbers back of George's Hill in Fairmount Park, Philadelphia.

HENRY SKINNER, *Recorder.*

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON.—January 8, 1891. The annual meeting of the Society was held at the residence of Prof. C. V. Riley, and the officers for the past year were re-elected, as follows: President, George Marx; Vice-Presidents, C. V. Riley and L. O. Howard; Corresponding Secretary, C. H. Tyler Townsend; Recording Secretary, C. L. Marlatt; Treasurer, B. P. Mann; Executive Committee, E. A. Schwarz, Otto Heidemann, W. H. Fox. The President, Dr. Marx, delivered an address on "The Spiders of the District of Columbia," in which he discussed at length the value of local lists as a means of forming a comprehensive knowledge of the fauna of a country. He referred to the somewhat scanty literature in this country of this nature as compared with that of Europe, giving also a bibliography of the more important writings on Araneæ of both this country and Europe, and concluded with a list of the spiders found to occur in the District.

The address was discussed by Messrs. Riley, Fernow, Marx, Schwarz, Smith, Dodge, Banks and others.

The thanks of the Society was voted Dr. Marx for his address.

February 5, 1891.—Mr. Schwarz called attention to certain Micro-lepidoptera which bred in the fruit of *Solanum carolinense*, stating that he had bred *Gelechia beneficentella*, and referred to the fact that no similar insects were known to breed in the fruit of cultivated potato.

Dr. Marx spoke of the spiders of the genus *Pholcus*, of which nine species occur in this country as against one or two found in Europe. He exhibited specimens of the American species.

Mr. Schwarz exhibited specimens of *Casnonia ludoviciana* found this Winter in great abundance near Washington, D. C., and remarked on the distribution and habits of this insect.

Prof. Riley laid before the Society an interesting card which he had recently received from Mr. McLachlan referring to the *Plepharocerid* larvæ mentioned at the previous meeting of the Society. Mr. McLachlan fully confirmed Prof. Riley's reference of the larvæ in question.

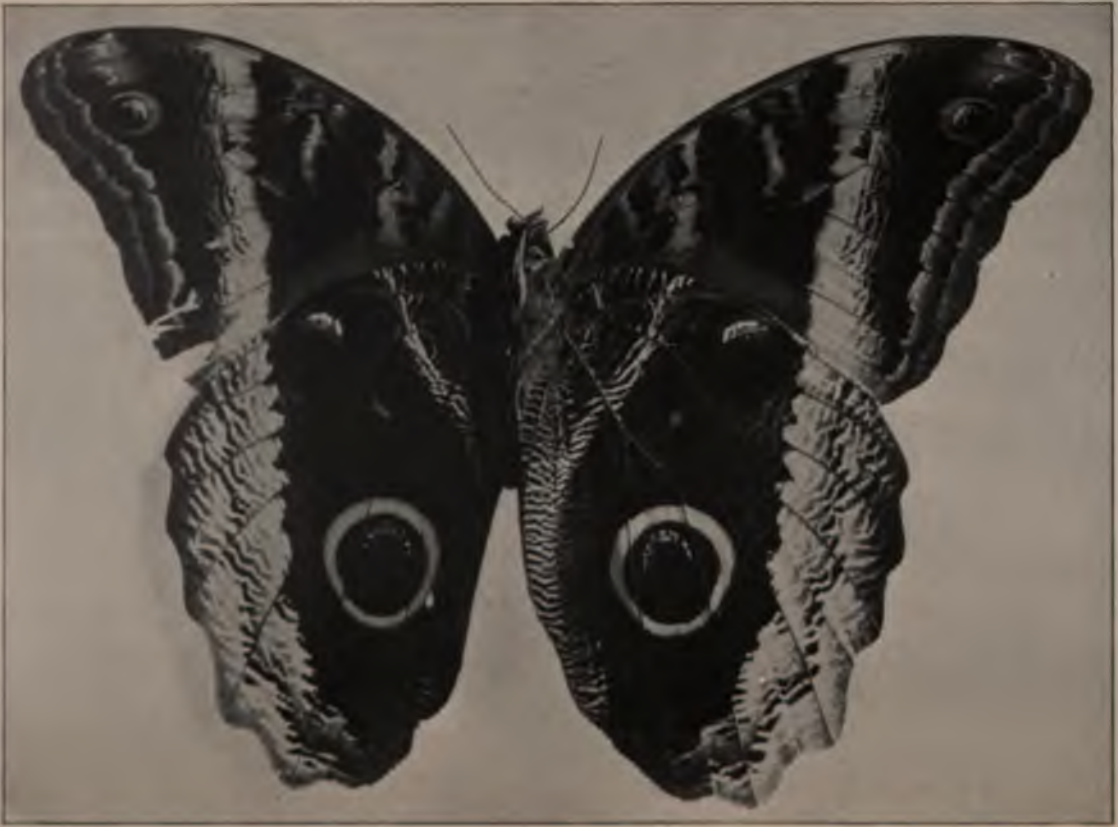
Mr. Townsend read a paper on a remarkable new Hippoboscid received from Dr. Alfredo Duges, Guanajuato, Mexico, which had been taken on a bat. It was described as *Trichobius* n. gen. *dugesii* n. sp.

Mr. Townsend also presented a paper on a Muscid, bred from swine dung, which he described, in its larval and imago stages, as *Cleigastra suisterei* n. sp. This case of breeding had shown a larval hibernation, and Mr. Townsend expressed the belief that in more northern latitudes most coprophagus Diptera (*Hæmatobia*, *Lucilia*, etc.) winter equally as larvæ or pupæ, and only exceptionally as perfect flies.

These papers were discussed by Messrs. Riley, Fox, Banks, Schwarz, Marlatt and Townsend.

C. L. MARLATT, *Recording Secretary*.

ENTOMOLOGICAL NEWS for June was mailed May 29, 1891.



# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. OCTOBER, 1891. No. 8.

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Plate VII represents the so-called "Owl Butterfly." This individual specimen is *Caligo atreus*, and flies in America in the Equatorial region. The underside photographed, looks very much like an owl, the ocelli representing the eyes, and the various shadings of brown representing the feathers. Insect collectors frequently represent the body of the owl by other lepidopterous insects, or in some cases brilliant Coleoptera, and use a species of *Caligo* for the head, thus making a pleasing picture. There are about twenty-five species in the genus, and they are all fine, large insects, some of them very beautiful, but not so brilliantly colored as the allied genus *Morpho*. They fly in Mexico and Central America, and in Tropical South America. They are represented in the East Indies by an allied genus, *Thaumantis*, which also contains large and beautiful butterflies of a dozen species. The specimen represented is, unfortunately, somewhat broken, but shows the character of the underside of the fly very well. This also shows the utility of the orthochromatic process, as this species has colors on the underside which would not be shown in an ordinary plate.

This plate, like others we have given in the NEWS, was made by the Crosscup & West Engraving Company of Philadelphia, and the butterfly was photographed in the Hall of the Academy by Mr. J. F. Sachse, the talented editor of the "American Journal of Photography," to whom we are indebted for it.—Ed.

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## Some wonderful aberrations and varieties of well-known insects.

By B. Neumoegen, New York.

There is a German fairy tale about "Hans im Glück," of which I am forcibly reminded. I have been of late such a "lucky Hans," acquiring a number of remarkable varietal and aberratic insects which deserve names, and the knowledge of which I herewith beg to impart to my entomological friends. I never sat down with more pleasure to describe new insects than I did in naming the following forms:

**Eacles imperialis** ab. **punctatissima.**—Head, thorax and abdomen bright yellow, with purple patagiæ, purple thoracical maculations and overcast with purple on upper part of abdomen. Primaries above: the yellow only shows somewhat at apex, apical part of costa, at intersection of nervures and exterior margin, and at fringes. The entire wings covered with innumerable blackish brown dots, which, near base and along interior margin, are confluent, giving the wings a uniform appearance of blackish brown. A basal purple tinge at interior margin. The purple maculations along exterior margin bounded by the transverse arched line from apex to centre of interior margin, as well as the discal spot, surrounded by a purple ring penetrating the granulated shade. Secondaries: upper part from base along costa to apex bright yellow; the space enclosed by the purple mesial line, and even beyond it, enclosing discal area up to base, covered with countless dots, giving the lower half of wings nearly a uniform appearance of blackish brown. Discal spot prominent, with purple ring and a purple basal tinge; fringe yellow.

Below, basal half of primaries and secondaries, as well as abdomen, bright yellow, the remaining space of both wings, as well as the discal spots, blackish brown produced by the many dots, partly confluent, of this color. Basal half of costa of primaries, and costa of secondaries, blackish brown; fringes yellow.

Type ♂ coll. B. Neumoegen.

This extraordinary insect was taken by Mr. H. Saenger at Highbridge, in the upper part of New York City.

**Eacles imperialis** var. **nobilis.**—Males above thorax and abdomen dark purple. Antennæ, head, as well as a central thoracical line and a cross-band at first segment of abdomen, of brownish yellow. Primaries and secondaries of a deep russet color; fringes and all maculations of dark purple, strewn with black dots, much like in var. *didyma* DeB., thus showing an irregular, triangular space of deep russet resting with its base on apical half of costa pointing towards median nervure and bounded by the discal spot and transverse apical arched line respectively. Secondaries of a rich russet, with discal spot; mesial undulating band and basal tinge of dark purple; some black dots along marginal area.

Below: wings and abdomen of a lighter russet shade. Discal spots, space between apical, arched transverse line and external margin of primaries of dark purple, fading towards interior margin. The marginal space of secondaries between mesial band and exterior margin of brownish purple.

Females.—The same rich russet as in the males prevails, but only the discal spots, the transverse apical, arched band of primaries, the mesial band of secondaries and the basal tinges are of dark purple. The marginal spheres in both wings resembling var. *didyma*, are of a bright chestnut-brown. Below: both wings russet, with light brown marginal sphere, somewhat fading into yellow in basal half of interior margin of primaries.

This is a remarkable variety from southwestern Texas; constant in all its characters, as shown by a number of examples I have lately received.

Types, ♂ and ♀, coll. B. Neumoegen.

**Citheronia regalis** ab. **Saengeri.**—Head, thorax and abdomen bright sulphur. Primaries grayish purple, with yellow nervures. Basal and discal dots very large and like the transverse intercellular, oval maculations of bright sulphur; apical part of costa and interior margin bright sulphur, fringes equally so at intersection of nervures. Secondaries uniformly bright sulphur, with a slight orange, basal tinge and faint indications of grayish purple transverse maculations in cells near anal angle.

Below: primaries of bright sulphur, with a slight orange tinge along nervures. Discal spot and marginal space from apex to outer angle, as well as the two upper cells near centre of costa, of grayish purple. Secondaries bright sulphur, with discal spot and mesial band of orange color; apical part of three upper cells of grayish purple.

Type ♂, coll. B. Neumoegen.

A wonderful aberration, fresh and bright in appearance, and entirely distinct from the typical form. It was taken in the upper part of New York City by Mr. Herman Saenger, to whose industrious exploits I cannot do more honor than by dedicating this beautiful insect to him. It is an enormously developed ♂, expanding 115 mm., the body having a length of 35 mm.

**Platysamia Gloveri** var. **reducta.**

This is a very curious dwarf form, flying in the highest part of the Colorado range of the Rocky Mountains. The discal spot in primaries invariably touches the transverse posterior white band. The reddish brown space containing the discal spot and bordered by the white basal and transverse posterior bands is so narrow that in most of the examples it shrinks to a mere black line at the centre of interior margin. The basal reddish brown area containing the discal spot of secondaries is so narrow, that it never exceeds 25 mm. in its measure. In other respects the insect tallies with the typical form.

It is easily distinguished by its minimal size of body and wings, and by the transverse band connecting with discal spot of primaries. Expanse of wings ♂, 83 mm.; 85 mm. Length of body, ♂, 25 mm.; ♀, 25 mm.

Types coll. B. Neumoegen.

Described from a number of examples taken at an altitude of 11,000 feet by Mr. D. Bruce in July, 1890, at Gibson Gulch, Colorado.

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# ON THE EARLY STAGES OF SOME MOTHS.

By Wm. Beutenmuller, New York.

**Cherocampa tersa** Linn.

LARVA.—Body pale green, with very fine longitudinal irrorations. Head small, smooth, green; mouth parts black; along the subdorsum is a rather broad, white band running from the fourth segment to the caudal horn on the eleventh segment; on the band is placed, on each segment, a round black ring, the one on the fourth segment with a black eye-like spot in the centre. Color of the underside of the body and all the legs concolorous to the above; caudal horn reddish, with the apex black. Length about 60 mm.

The larva figured by Abbot and Smith (Ins. Ga. p. 75, pl. 38) has in each of the black rings along the subdorsum a large red spot. In all my specimens, six in number, no sign of the red spots was apparent.

FOOD-PLANT.—*Manettia bicolor.* September.

**Pyromorpha dimidiata** H.-S.

EGG.—Ovate, pale yellow, smooth, shining, slightly flattened above and below. Length about 1 mm.; width about .75 inch. Laid June 18th; emerged June 28th.

YOUNG LARVA.—Dirty grayish white and covered with rather long hairs of the same color; head also grayish white with a brown spot on each side of the anterior part; mouth parts pitchy black. The head is sometimes entirely black or brown, shining; underside of body same color as above. Length 50 mm.

Not knowing the food-plant I was unable to rear the larvæ to maturity. The eggs I obtained from a number of females flying amongst a species of grass on the border of a well-shaded and dry piece of woods on Long Island, N. Y.; about fifty imagos were taken. The young larvæ, however, refused to eat the grass on which I found the moths, and which I supposed was also the food of the species.

**Apatela innotata** Guen.

LARVA.—Head, posterior portion pitchy-brown, anterior part dirty-white, with the mandibles pitchy. Body above dull grayish brown, with a series of four shining, black, piliferous spots on each segment along the dorsal region from the second to the last segment and two rows of yellow spots along each side with another row of black spots between; underside dull grayish. Legs and feet concolorous. The body is also sparsely covered with sordid white hairs. Length 25 mm. Food-plant unknown.

Found ready to pupate on the trunk of a hickory tree, the bark of which the larva mimics. Collected at Englewood, N. J., Aug. 21, 1890. Imago emerged May 6, 1891. The larva spun a rude cocoon made of small bits of wood.

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## ROCKS.

By J. T. MASON, Houston, Tex.

On looking over the present volume of NEWS I noticed the article in the February number entitled, "Lepidoptera at the Electric Lights," by Dr. Ottolengui. Reading it caused all the difficulties in the way of many of us becoming advanced entomologists to rise before me. I handed the book to a young friend of mine and told him to read the article; he has collected about a year, and was greatly interested in the subject. After he had read it through he remarked, "how does this fellow get all these names down so fine?" This is a question which is readily answered; he lives in New York and in his association with other more advanced students, and in having access to large collections he can readily manage it. This is a rock on which ninety-five per cent. of young beginners are wrecked. We will take this city as an example: I have known not less than six in the past two years that have commenced and have gone to pieces on this rock and fallen by the wayside, and it is most natural. A beginner sees a collection, and is attracted by its beauty, and concludes that he would like to become a collector also, and gets his net and bottle and makes a start. He soon finds that he has a large lot of material on hand and can't tell one from another, rare from common, or good from bad, and winds up in confusion and disgust. Now, if we had in this country some such works as are to be found in Europe, which give figures of most of the species, and published at a reasonable price, many of the difficulties would disappear, but at present the literature is so scattered, and the illustrated works in this country are so very expensive as to place them out of reach of most of us. Those plates of *C. regalis* have suggested to my mind that if we had photos like these of the species in this country, or of a considerable portion of them along with descriptions of the colors, and if such a work could be gotten out, say at a cost of not over ten dollars, we would find a hundred collectors where we find one to-day. Last season a friend caught a *luna* moth and brought it thirty-five miles because he thought it a rarity; it would have crushed him if I had mentioned the fact that I had sent over six hundred to London during the same month. About twice a year we get an accumulation of unknown material and send them North for identification; this works pretty well where we have more than one of a kind, but it often happens that we have but one and don't want to box it and run the risk of having it lost or broken. All collectors know how we cherish a single specimen believed to be rare, and in future I never intend to let these single specimens go out of my keeping. I am, therefore, looking forward to the good time coming when we can all have better means of identification, and Entomology becomes more popular and generally studied. I have enumerated some of the rocks, but there are more, and I hope they may be gradually eliminated.

# A NEW GLUPHISIA.

By Prof. GEO. H. HUDSON, Plattsburg, N. Y.

**Gluphisia avimacula** n. sp.

Male.—Thorax cinereous; vertex of head, collar and anterior half of patagia nearly black; front, palpi and pectus pale brown; legs cinereous, the tarsi ringed with dark brown; abdomen gray. Primaries cinereous, thickly dusted with black scales; a black basal line, dentate on subcostal and median veins and sending down, intermediately, two fine black lines, which reach and enclose the small, pale ochreous basal spot, resting on median vein; obscure on costa and below submedian vein. Second band nearly straight, deep black, prominent, starting on costa at a little less than half way to the apex, slightly angulated outwardly on subcostal and median veins, forming a shallow inward curve or sinus below submedian fold, widening at internal margin. An ochreous subtriangular discal spot edged with black, projecting a point towards the costa and a shorter one towards the base along median vein. Externally contiguous to the discal spot is an indistinct third band, subparallel to the first, slightly waved, pale brown and diffuse, more distinct on internal margin. Beyond this is a narrow and faint fourth beginning on costa at about three-fourths distance from base, parallel to external margin, dentate inwardly on the veins, slightly angulated at vein 2, edged externally with pale cinereous. A fifth band consisting of a row of dark spots, edged within with pale cinereous, runs about midway between band four and the external margin. It has a slightly waved appearance with a shallow inward curve on vein 2, from thence it runs to the outer angle and joins the row of black, diffuse, intervenular spots in the pale cinereous fringe. The ground color of wings is palest between the first two lines, and slightly yellowish beyond and below the discal spot. Secondaries brownish cinereous, with a faint mesial band, dentate inwardly between veins 1 and 2, more distinct at internal margin, where it is white, shaded before by a black line and behind by a more diffuse black spot, followed by another pale spot before reaching margin; fringes as in primaries, but with intervenular spots more diffuse, almost forming a continuous line. Beneath concolorous with secondaries above, tinged with cinereous at the apex of the primaries and outer third of secondaries. On each of the wings, beyond the middle, a slightly undulating darker band edged with pale whitish outwardly and following the course of the band above.

Female with front cinereous, concolorous with thorax. Expanse: male, 38 mm.; female, 40 mm.

Described from two males and one female taken May 15th and 22d, 1887, and May 10, 1891, at the electric lights, Plattsburg, N. Y.

THE enterprising bee keeps up with the times by having his apartments arranged in sweets.—*Yonkers Gazette.*

## A NEW GNOPHÆLA FROM COLORADO.

By W. J. HOLLAND, Ph.D., Pittsburg, Pa.

**G. Clappiana** n. sp.—Male. Upperside: anterior wings black, with a quadrate spot of pale yellow at end of cell and a band of three small, sharply defined, oval spots below the apex. A minute white spot at base; fringes at apex and near exterior angle narrowly white. Posterior wings deep bluish black, with the fringe somewhat broadly white. Abdomen blue-black; front white; collar marked by two small blue spots; patagiæ pointed with white at base and tips and bordered internally with pale blue. Underside: anterior wings as above. Posterior wings with faint white spot at end of cell, otherwise as above; chest rufous. A line of small white spots is found on each side of abdomen.

Type coll. Holland. Described from a single specimen taken upon the mountains of Williams River, Colorado, by Mr. Geo. H. Clapp, president of the Iron City Microscopical Society, July, 1891.

This description was written in the rooms of the American Entomological Society after a careful search through the literature and examination of the species in the genus.

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## A NOTE ON THE LIMACODID GENUS ISA Pack.

By HARRISON G. DYAR.

Recently on a visit to Boston I saw, by the kindness of Mr. Henshaw, the type specimen of the genus *Isa*, created for Herrich-Schäffer's species *textula*. The specimen is a small female *Sisyrosea inornata* G. & R., and I have compared Dr. Packard's characterization of genus *Isa* with specimens of *inornata* and find all the characters borne out. Especially his description of the venation is characteristic of the somewhat peculiar venation of *S. inornata*. I am not sure that this is the correct identification of the species *textula*, but as I know of no other species to which the name should apply, I would arrange the genus as follows:

Genus ISA Packard.
    *sisyrosea* Grote.
inornata G. & R.
    *? textula* H.-S.
nasoni Grt.
    *rude* Hy. Edw.

# ELEMENTARY ENTOMOLOGY.

The third stage of existence in lepidopterous insects is called the chrysalis or pupa stage. The term chrysalis is derived from a word meaning golden, because many of them are decorated with golden spots. Pupa comes from a word meaning boy or child, because a pupa was thought to resemble an Egyptian child swathed in bandages, or a mummy. In the Rhopalocera or diurnals, the chrysalis or pupa, is naked, and not covered with a cocoon, nor do the larvæ enter the ground to undergo their changes. The majority also differ in being variously ornamented and shaped, although the general pattern is that of an inverted cone. The chrysalids of the Hesperids or skipper butterflies which approach the moths or Heterocera in character are protected by a few leaves or blades of grass which the caterpillar draws around itself before changing. The character of the outer hard covering in these is different from the diurnals in general, being hard, dark and shining, like those of the moths, although quite a number are covered with a light bloom like that on a plum. It is thus quite easy to distinguish the chrysalis of a butterfly from that of a moth. The chrysalids of the diurnals are suspended to a stick or leaf by the extremity, or in addition to this in some cases are fastened by a sling of silk which goes around the body of the chrysalis, and is fastened on each side of the supporting leaf or twig. In the former case the head of the caterpillar hangs downward, and in the latter it points upwards and outwards at an angle. Some of the larvæ of the moths find a convenient place under a piece of bark and change to a chrysalis; some spin a shroud or cocoon, which in some cases is composed of silk, and in others of the caterpillar's own hairs interwoven. Some employ bits of wood, leaves, sticks and pieces of earth in the same way. Many enter the ground and transform as already mentioned. The changes that go on in a chrysalis are wonderful. The chrysalis is apparently dead, showing no signs of life, but in the inanimate looking object is being developed a beautiful insect, perhaps a gorgeous Morpho* or a beautiful Ornithoptera,* yet to all appearance it is an insignificant looking object, giving no indication whatever of Nature's legerdemain or fairy-like performances.—ED.

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* Grand butterflies from Brazil and the East Indies, respectively.

# RANDOM NOTES ON LEPIDOPTERA.

By HENRY SKINNER, M.D., Philadelphia.

This Summer *Pamphila hobomok* ♂, and the two females (black one *Pocahontas*), were quite abundant May 31st, and eggs were secured. *P. zabulon* ♂ was also rather common at the same time. I have never seen a female of *zabulon* yellow like the male, and am sure it does not exist in this locality if at all. I have found the male and the black female in copulation a number of times. I can distinguish the females of *zabulon* and *hobomok* without any difficulty, and feel sure that the two species are entirely distinct, and at some future time will have more to say about them. June 10th I saw a female *P. manataaqua* ovipositing, she went down in the grass near the roots and close to the ground, and walked about in the miniature woods depositing an egg here and there near the base of the blades and on the dead and decaying grass. These eggs hatched June 17th. This species was exceedingly abundant on a grassy embankment, and the specimens darted from flower to flower by a succession of quick jerks. I mention the occurrence of the species here in such numbers as it is usually considered quite rare. After one becomes acquainted with it, it can be readily distinguished from *cernes* even on the wing. *P. fusca* was common in Fairmount Park June 9th, and nice, fresh specimens of *Eudamus lycidas* were taken. *Pamphila Aaroni* was moderately plentiful at Cape May, N. J., June 14th. Mr. Philip Laurent has also taken the species at Anglesea, N. J. It is a very wary fellow, and has a very quick flight, but if you get him in his favorite place, the trumpet-like flower of the wild morning-glory, he is at your mercy. He flies straight for the flower, and alights on the lower edge, and walks slowly in until he reaches the sweets, and keeps very quiet, and you would not know there was a specimen around until you learn his artful tricks. A cyanide-jar at the opening of the flower means business and a fine, faultless specimen.

*P. delaware* is a great rarity here; I saw one fine specimen on a ball-bush flower July 11th, and he was so pretty and fresh, with his brilliant yellow-orange under wings, that I tried to induce him to go into a small cyanide bottle, but he did not agree with me on the subject. Next time I see that fellow I will use a net. I think the types were caught here by Mr. James Ridings. *P.*

*massasoit* is exceedingly abundant in the swamps near Westville, N. J., from the 4th to the 10th of July, and you can get them as fast as you can use net and bottle. I think it quite a pretty species when fresh; it has such pretty velvety-brown wings. Mr. H. G. Willard, of Grinnell, Iowa, informs me that *Amblyscirtes samoset* flies there in the woods about June 9th, but is anything but common. Mrs. Slosson has also taken a few specimens of this rare species at Franconia, N. H. I will now skip from the skippers and give a couple of new localities which are interesting. Mr. H. G. Willard has sent me *Chrys. helloides* from Iowa. Mr. Edwards' catalogue gives Montana to Arizona; Oregon, California. M. C. H. T. Townsend has sent me *Synchlœ crocale* from Las Cruces, N. Mex.; types, I think, came from western Ariz. The New Mexico specimens lack the internal row of white spots on the secondaries.

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## An Exorista parasitic on Lagoa opercularis.

By C. H. Tyler Townsend, Las Cruces, N. Mex.

Dr. Alfredo Duges, of Guanajuato, Mexico, has kindly given me an *Exorista* labeled "from the cocoon of *Lagoa opercularis.*" It agrees with none of the twenty-six new species described by Mr. van der Wulp in the "Biologia Centrali-Americana," and a description of it is presented below. It belongs near *E. flavicans* v. d. W. among the species with ciliate hind tibiæ.

**Exorista lagoæ** nov. sp. ♂.—Black, cinereous with a more or less brassy reflection. Eyes dark brown, thickly pubescent; front, sides of face, cheeks and posterior orbital margins pale brassy; front at vertex narrower than the eyes, much wider at base of antennæ, rather prominent; frontal vitta black, less than one-third the frontal width, wider anteriorly, pronged posteriorly; frontal bristles descending to base of third antennal joint, those before base of antennæ decussate, the sides of front with fine bristly hairs outside the frontal row and on the ocellar area; no orbital bristles; face receding, facial depression wide, silvery; facial ridges bare, only three or four very small bristles above the vibrissæ, which latter are decussate and inserted only slightly above the oral margin; sides of face narrow above, very narrow below base; cheeks narrow, invaded below by the cinereous hairy occipital area, with bristles on lower border; antennæ nearly as long as face, black; second joint short, third joint more than four times as long as the second; arista long, slender, scarcely thickened on basal third, indistinctly jointed at extreme base, black; proboscis short, fleshy, brownish, especially the large labella, which are furnished with yellowish brown hair; palpi well developed, club-shaped, pale brownish yellowish, black, hairy; occiput cinereous, gray hairy, with a black band from vertex to centre, and the orbital margins with a fringe of black bristles. *Thorax* black, brassy-cinereous pollinose; leaving four more or less well defined black vittæ; thorax bristly and hairy, humeri and pleuræ cinereous; scutellum blackish at base, apical portion broadly ochreous, with an apical strongly decussate pair of macrochætæ and three lateral pairs, the intermediate one short. *Abdomen* moderately broad, ovate, covered with short bristles; first segment somewhat shortened, black, without macrochætæ; second to fourth segments pale brassy cinereous, leaving the hind margins and a median vitta shining black; second segment very faintly reddish on sides, venter silvery pollinose; a median marginal pair of macrochætæ on second segment and a lateral marginal one; about ten marginal on third segment; anal segment with macrochætæ interspersed with bristles. *Legs* black, femora and tibiæ faintly silvery; femora hairy, tibiæ with some strong bristles; hind tibiæ with a fringe of bristles on outer edge; a strong bristle beyond the middle and one or two at tip longer than the rest; claws and pulvilli elongate, the pulvilli smoky whitish. *Wings* longer than the abdomen, moderately wide, without costal spine, grayish hyaline; tegulæ yellowish gray, halteres dark brownish. Length 7 mm.; of wing, 6 mm.

Described from one specimen. Guanajuato, Mexico.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

THE List of Lepidoptera of Boreal America, by Prof. J. B. Smith, has reached 5042 numbered species to date; will be completed by Oct. 1, 1891.

Mr. LEVI W. MENGEL, of Reading, Pa., who went as entomologist to the West Greenland Expedition sent out by the Academy, has returned, and brought home a collection of about four hundred insects.

WE have heard that Prof. J. B. Smith sailed for Europe September 16th. We wish him a pleasant voyage, and have no doubt but what he will come back laden with entomological facts picked up in the museums of Europe.

Prof. R. R. ROWLEY, who has contributed a number of very interesting articles to the NEWS, has been appointed professor of Natural History in ae High School at Fort Smith, Arkansas. We hope he may continue to lo good entomological work in this new and interesting locality.

It is a solitary fly that annoys. Where there are swarms of flies they have their time and attention partly occupied in mutual conversation, playing tag and other fly diversions; but get into a room with a solitary fly and he will give you his undivided attention.—*Boston Transcript.*

The death of Capt. K. Yankowsky on the upper Yang-tse-Kiang, is a blow to Entomology, and an especially severe one to me. He was known as an excellent captain, an indefatigable traveler, and an ardent collector. He had just returned from a collecting trip to the sacred Mount Omi in Szechuen, when death overtook him on board the boat, built by his own hands, in the midst of his awe-stricken Chinese crew.—B. Neumoegen.

As the commercial Paris green is frequently adulterated with lime I append a reliable test, which may be of use to the many workers in the field of economic entomology. If you take about as much Paris green as will lay on a dime and put it in about tablespoonful of aqua ammonia it will, if pure, all dissolve and turn to a beautiful blue color. If it is adulterated there will be a white sediment in the bottom, which shows the presence of lime.—F. W. Goding.

Expeditions to Western China and Tibet are, even at this day, connected with great risk of life and enormous expenses. Fanaticism, lying, stealing, are some of the many vicissitudes inflicted by the border people of both realms on European collectors. Although the Pratt Expedition, sent out by Mr. Leech, has been highly successful, no other collector will be sent there again for this reason. Mr. Kricheldorf, the head collector of the last expedition, writes me harrowing tales of his experiences.

B. Neumoegen.

Some of our old entomologists put us of the younger generation really to shame. Here is an example—Dr. John Gundlach, of Cuba, just writes me: "My health is unimpaired. On July 17, 1891, I celebrated my 81st birthday. My friend, Dr. Gutierrez, president of the Academy, died last December at the age of 90 years. Poey, my best and oldest colleague in Natural History, died in January, nearly 92 years old. I shall try to do the same. Next Spring I shall be on a collecting expedition in Porto Rico and St. Domingo." What youthful ardor and elasticity!

B. Neumoegen.

Bitten by a Tarantula.—While Samuel G. Williams, manager of the Union News Company, was unpacking a box of pears Thursday, which ie received from Southern Texas, a tarantula leaped from the box and stened its fangs in the middle finger of his right hand. He threw it from im and the spider was killed. In half an hour from the time he was itten, Williams began to get delirious, and his pain was so great that it ok three men to hold him. Three doctors are in attendance, but no hope is entertained of saving the man's life.—A subscriber wishes to know if any reader of the NEWS has knowledge of an authentic case of death from the bite of a tarantula?

A NUMBER of the joints of the ordinary cactus of the plains (*Opuntia missouriensis*), containing pupæ, were recently sent from Colorado to the Kansas University and placed in the breeding cases. Although the pupæ have not yet transformed, a number of puparia have, within the past few days, disclosing two allied Syrphids, *Copestylum marginatum Volucella fasciata*. The puparia were lodged deeply in cavities within the stem,—evidently the feeding place of the larva. The puparia of the two species are scarcely distinguishable, both having a short, conjoined stigmatic tube and two slender anterior projections. The former species has the singular habit of continually keeping an alternate up and down movement of its remarkable antennæ while walking.—S. W. WILLISTON.

This June while on a tramp in quest of Coleoptera I was going through a patch of woods and I noticed on my path one of the larger predatory Diptera which so closely mimic a bumble-bee, and kindly determined for me by my friend, Mr. Wm. T. Davis, as *Dasyllis thoracica* Fabr. He was carrying away a Longicorn beetle. On attempting to pick him up he flew away carrying the beetle with him, which, nevertheless, he dropped upon being struck with my hand and settled in the grass a few feet distant, where he was easily captured. The proboscis of the fly had separated the elytra and penetrated the abdomen between the second and third segments. I have often noticed this fly preying upon soft insects, as Lepidoptera, etc., but never before upon a hard bodied beetle.

J. C. THOMPSON, Clifton, L. I., N. Y.

W. G. WRIGHT, a naturalist of San Bernardino, Southern California, is spending a few weeks in this section (Sitka, Alaska) for the purpose of collecting plants and insects. He finds much of a novel character to interest him, and considers that Alaska presents a wide field for investigation. On Thursday, in company with Fred. E. Frobese, he ascended Mount Verstovia by way of the Jamestown Bay trail, and remained on the summit for some six hours, during which time he secured a large number of species of plants and grasses growing above the timber-line. Mr. Wright has secured several species of flora which he believes to be as yet unknown to botanists. The Alaskan grasses in Mr. Wright's collection will be presented to the Department of Agriculture at Washington, and the flowering plants will be given to the Academy of Sciences at San Francisco and the State University of California, located at Berkeley. Very few insects have as yet been found by Mr. Wright during his search, and those discovered are of no particular value or interest.

LOCUSTS IN MOROCCO.—Some curious information in regard to locusts in Morocco is contained in the last British Consular report from Mogador. During the Spring the country was ravaged by immense swarms of the insects, which were first reported from the southern province of Soos about the end of October, were overrunning the neighboring land of Haba and Shiadma by the end of November, and were subsequently heard of in various parts of the interior, and still later from the important grain-producing districts round Mazagan and Casablanca. Late reports from Mazagan were that they were settling down there, and busy laying their eggs, which caused great anxiety for the Spring crops, the young locusts, though unable to fly, being even more unsparing in their devastations than the adult insects. In addition to the damage done to green crops, groves of olive and almond trees were stripped of their bark in several districts, where the next yield of oil and almonds will be seriously affected. In some places farmers had to hurriedly gather their olives before they were ripe to save them from the voracious insects. No general and continued measures are taken, as in Algeria and Australia, against these pests, the only way in which their numbers seem to be materially reduced being the collection of large quantities for sale as food among the natives. They are not "unclean" to either Jew or Mohomedan, though prawns, to which they are compared in flavor by some Europeans who have tasted them, are not eaten. Taken into the town in camel loads in heaping sackfuls of ruddy brown or greenish yellow insects (the first color in Autumn, the latter in Spring); they are first boiled in salt and water, then fried or parched. The same method seems to have been in vogue, according to old writers, early in the last century. When properly preserved the locust was looked upon as a convenient form of food for travelers to take with them on the road. A fearsome story was recently told in the Mellah, or Jew's quarter of Mogador, that two little children, sent to fetch water at a village in Shiadma not returning, their parents went in search of them and found only a heap of bones thickly covered with locusts. It was further reported that a consignment of locusts from that district came in and was sold chiefly in the Mellah, and that many Jews fell ill in consequence of having unwittingly partaken of insects which had eaten human flesh.—*London Times.*

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

## Entomological Literature.

Compte Rendu. Societe Entomologique de Belgique, June 6, '91.—Descriptions of new species of Clytridæ and Eumolpidæ,* by E. Lefevre; *Colaspis chrevrolati*, St. Domingo, n. sp. Coleoptera of Eastern Africa,* by L. Fairmaire; *Hasumius*, *Selomothus*, *Dichotymus*, *Blosyridius* n. gen. A new genus of Myrmecidæ,* by A. Forel; *Aeromyrma*. Note on the *Chrysochroides*,* by C. Kerremans. Additions and annotations to the lists of indigenous carnivorous Coleoptera and Lamellicorns, by A. P. de Borre.—July 4. Entomological miscellanies. IV. Diagnoses of Madagascan Phytophaga,* by A. Duvivier; *Menioporus*, *Neodera*, *Sanckia*, *Metopædema*, *Cynortella*, n. gen.

Bulletin de la Societe Philomathique de Paris 3e Serie, III, 2, 1891.—On the function of the sting in *Heterodera schachtii;* On the buccal apparatus in the Phyrganids, by J. Chatin. On the resistance to asphyxia by submersion in some insects, by M. Devaux. Note on the structure of the venomous glands of Araneids, by P. Gaubert.

Le Naturaliste (Paris), Aug. 1, 1891.—Two new *Parnassius* from Central Asia,* by L. Austaut.—Aug. 15. Habits and metamorphoses of *Erastria scitula* Ramb., a nocturnal lepidopter, by Capt. Xambeu.

Jahresbericht des Vereins fur Naturkunde zu Zwickau (Saxony), 1890; Zwickau, 1891.—The Gall formations (Zoocecidæ) of the German vascular plants, an introduction to their identification, by Dr. D. H. R. von Schlechtendal.

Notes from the Leyden Museum, xiii, 2, April, 1891.—Descriptions of new species of Curculionidæ,* by W. Roelofs. List of the Lepidopterous insects collected by Mr. A. G. Vorderman in the island of Billiton, by P. C. T. Snellen.

Compte Rendu. L'Academie des Sciences (Paris), July 27, 1891.—Contributions to the natural history of a cochineal, *Rhizœcus falcifer* Kunck., discovered in the green houses of the Museum and living on the roots of the vine in Algeria, by J. K. d'Herculais and F. Saliba.

Il Naturalista Siciliano (Palermo), May, June, July, 1891.—Catalogues of the Coleoptera of Sicily, by E. Ragusa. Entomological note on some species of the genus *Reicheia* and of the genus *Mylabris* (*Bruchus*), by F. Baudi.

Ertesito az Erdelyi Muzeum-Egylet Orvos-Termeszettudomanyi Szakosztalyabol (Proceedings of the Medical and Natural Science Section of the Transylvanian Museum Union), xvi, 1, 2, 3, 1891.—*Carabus violaceus* L. var. *Wolfi* Dej. L. v. Mehely. List of the Lepidoptera usually occurring at Klausenberg, by A. Pachinger. Contributions to the Orthopterous fauna of Szilagyer Comitates, by J. Pungur.

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* Contains new species other than North American.

ANNALS OF THE QUEENSLAND MUSEUM, No. 1, Brisbane, 1891.—Synonymical catalogue of the Lepidoptera Rhopalocera (butterflies) of Ausralia, with full bibliographical reference, including descriptions of some new species, by W. H. Miskin.

ZEITSCHRIFT DER DEUTSCHEN GEOLOGISCHEN GESELLSCHAFT, xlii, 4, Berlin, 1891.—Contributions to the knowledge of the fossil Arachnida, by E. Haase; two plates.

BERLINER ENTOMOLOGISCHE ZEITUNG, xxxvi, July, 1891.—Orthopteroogical contributions, IV: The Pseudophyllidæ of Africa;*† three plates; List of the Acridiodæ collected by Dr. Paul Preuss in Cameroons,* figs.; Sumatran Phaneropteridæ, figs., by F. Karsch. New beetles from East Africa,*† by G. Quedenfeldt. Greek Heteroptera collected by E. von Oertzen and J. Emge,* by O. M. Reuter. Communications on Gallflies from Kreise Siegen,* one plate; Three new gallflies,* by E. H. Rubsaamen. Prussian Amber Beetles, new forms from the Helm collection in the Dantzig Provincial Museum,*† by C. Schaufuss. On the Hymenopterous genera *Evania* and *Gasteruption*,* by E. Taschenberg. On some North African Chilopods,* by C. Verhoeff. A contribution to the Central European Diplopod fauna,* id., four plates. A contribution to the knowledge of the Saldeæ and Leptopods,* id., fig. Some remarks on Apidæ,* id., figs. On the spinning of an *Aphidius* larva upon *Aphis* (*Drepanosiphum*) *platanoides* Schrnk., by Dr. W. Weltner, figs. Obituary notice of Dr. L. W. Schaufuss, with portrait.

RENDICONTO DELL 'ACCADEMIA DELLE SCIENZE FISICHE E MATHEMATICHE (Sezione della Societa Reale di Napoli), 2e Serie, iv, 6, June, 1890.—Miscellanea Entomologica III: Species of Tenthredinidæ from Greece;* A new genus of Italian Tenthredinidæ;* Four species of Hymenoptera from Armenia;* A new species of *Derocalymma*,* by A. Costa.

XV. BERICHT DER NATURFORSCHENDEN GESELLSCHAFT IN BAMBERG. 1890.—The Hemiptera and Cicadina of the vicinity of Bamberg, by Dr. Funk.

OFVERSIGT AF KONGL. VETENSKAPS-AKADEMIENS FORHANDLINGAR. Arg. 48, No. 6, June 10, 1891.—The African genera of Calandridæ allied to *Oxyopisthen* Thomson,*† by C. Aurivillius, figs.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxiv, Bruxelles, 1890.—Note on the Coleoptera brought from the Congo by MM. le Capt. Bia, Leon Cloetens, Fern. de Meuse, Joseph Duvivier and Lieut. Paul Lemarinel. List of the species and new descriptions,*† by A. Duvivier. Catalogue of the Ichneumonidæ of Belgium belonging to the group Tryphonidæ,* by Dr. Jacobs and Dr. Tosquinet. Essay on the Malacoderms of Belgium, by E. Rousseau.

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* Contains new species other than North American. † Contains new genera.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT (Iris, Dresden, iv, 1), Jahrgang, 1891, Lepidopterological No. 1, Berlin, 1891.—On the systematic classification of the butterflies, by Dr. E. Haase. List of the Lepidoptera collected in Palestine and Syria by Dr. Alphons Stubel, including three new species,* by H. Calberla. On a collection of Lepidoptera from Bangala, by Emily Mary Sharpe. New exotic Lepidoptera,* by Dr. O. Staudinger, two plates. A new *Parnassius*-form and two new Palaearctic species of *Arctia*,* id. The Macrolepidoptera of the neighborhood of Dresden, by H. Steinert.

ENTOMOLOGISCHE NACHRICHTEN, xvii, 15, August, 1891.—Cryptid studies, by Dr. Kriechbaumer. On *Chiastocheta* (*Aricia*) *trolli* Zett., V. von Roder. The Zoöcecidæ of Lorraine (continued), by J. J. Kieffer.—No. 16. August, 1891. A new *Ornithoptera*,* by E. G. Honrath. Sumatran Odonata collected by Dr. L. Martin in Bindjei (Deli),* by Dr. F. Karsch. Tryphonid studies,* by Dr. Kriechbaumer. The Zoocecidæ of Lorraine (concluded), by J. J. Kieffer.

MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT, viii, 6, 7, Schaffhausen, 1890.—Lepidopterological gleanings,* by P. Ratzer. Norwegian ants and glandular cement as material for the nest building of ants, by Dr. A. Forel. A new Orthosia from southern France,* by Dr. M. Standfuss. A new *Ichneumon* from Switzerland,* by Dr. Kreichbaumer. *Ephippigera crucigera* Fieb., by Dr. G. Schoch. On some varieties of *Carabus auronitens*, by Dr. G. Stierlin. Remarks on Coleoptera and description of new species,* id. On the habits of the Wustengrill (*Brachytrypus megacephalus* Serv.), by Dr. A. Forel. Collecting note (a new species of Coleoptera) and Coleoptera Helvetiæ (continued), by Dr. G. Stierlin. New Hymenoptera from Madagascar,* by H. de Saussure. Description of some new snout beetles,* by Dr. G. Stierlin.

VERHANDLUNGEN D. K. K. ZOOLOGISCH-BOTANISCHEN GESELLSCHAFT IN WIEN, xli, 2.—Contribution to the Microlepidopterous fauna of Dalmatia,* by Dr. H. Rebel. Diagnoses of new butterflies in the k. k. Natural History Court Museum,* by A. F. Rogenhofer.

ANNALES DES SCIENCES NATURELLES. ZOOLOGIE 7e Serie, xi, 6, July 20, 1891.—On some points in the history of the embryonal development of the praying Mantis (*Mantis religiosa*), by H. Viallanes; two plates.

MELANGES BIOLOGIQUES TIRES DU BULLETIN DE L'ACADEMIE IMPERIALE DES SCIENCES DE ST. PETERSBOURG, xiii, 1, 1891.—Entomological contributions: I. Two new Central Asian species of *Carabus*. II. On the synonymy of some Carabids, by A. Morawitz. List of the species of the genus *Scolytus* in the collection of the Musee de l'Academie Imperiale des Sciences of St. Petersbourg,* by I. Schevyrew.

BULLETIN DE LA SOCIETE IMPERIALE DES NATURALISTES DE MOSCOW, 1890, No. 4; 1891.—*Tarantula opiphex mihi*,* by W. A. Wagner; 1 plate.

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* Contains new species other than North American

TRAVAUX DE LA SOCIETE DES NATURALISTES A. L'UNIVERSITE IMPERIALE DE KHARKOW, xxiv, 1891.—List of the Evaniidæ found in the government of Kharkow, by W. A. Jarochewsky.

WEST AMERICAN SCIENTIST, vol. vii, No. 61.—New Bombylidæ from California, by D. W. Coquillett. *Lordotus junceus* n. sp., *L. diversus* n. sp., *Toxophora vasta* n. sp.

TRANSACTIONS AND PROCEEDINGS OF THE NEW ZEALAND INSTITUTE, vol. xxiii, 1890.—Further Coccid notes, with descriptions of new species from New Zealand, Australia and Fiji, by W. M. Maskell. The habits and life-history of the New Zealand Glowworm, by G. V. Hudson. On New Zealand Cicadæ, by G. V. Hudson. A few words on the Codlin-moths *Carpocapsa pomonella* and *Cacœcia excessana*, by G. V. Hudson. New species of Lepidoptera, by E. Meyrick. On new species of Araneæ, by A. T. Urquhart. On the occurrence of *Danais archippus* and *Sphinx convolvuli* (?) in Nelson, by R. I. Kingsley.

THE JOURNAL OF THE LINNEAN SOCIETY, vol. xxiii, No. 146.—On the tongues of the British Hymenoptera Anthophila, by Edward Saunders. Vol. xx, Nos. 124-25.—Notes on the zoölogy of Fernando Noronha, by H. N. Ridley. Insects, excepting Coleoptera, by W. F. Kirby. Coleoptera, by C. O. Waterhouse.

ENTOMOLOGIST'S MONTHLY MAGAZINE, September 9.—Entomological notes from Port Darwin, by J. J. Walker. Larva of *Eupoecilia geyeriana*, by N. M. Richardson. New genera of Agdistidæ and Pterophoridæ, by Lord Walsingham. Notes on British and exotic Coccidæ, by J. W. Douglas. Above paper describes two new species, *Orthezia occidentalis* from Colorado, and *Orthezia prælonga* from Trinidad. On two species of *Elcatis* found in Japan, by S. Lewis. Notes on food-plants of *Thecla rubi*, by R. M. Prideux. *Stenophylax alpestris* in Yorkshire, by G. T. Porritt. *Nothochrysa capitata* near Weymouth, by N. M. Richardson. *Dufourea vulgaris* at Cobham Surrey, by E. Saunders. Various captures in June and July, by C. W. Dale. On oviposition and ovipositor in certain Lepidoptera, by John H. Wood.

THE ENTOMOLOGIST, vol. xxiv, No. 338.—*Cucullia verbasci* and its allies (with plate), by Richard South. A preliminary list of the insect fauna of Middlesex, by T. D. A. Cockerell. Entomology of Granada and its neighborhood, by F. A. Walker. Contributions to the chemistry of insect colors, by F. H. P. Coste. Notes, news, captures, etc. Doings of societies.

OBITUARY.—The death is announced of Mr. Ferdinand Grut, F.L.S., who was at one time vice-president of the Entomological Society of London, and also occupied other important positions in the Society at various times.

# Doings of Societies.

The Entomological Society of Washington.—February 5, 1891. Mr. Schwarz presented for publication descriptions of two North American species of the Cuculionid genus *Phytobius*, and one of them he considered to be identical with the European *P. velatus*. The other is described under the name of *Ph. griseomicans*. Mr. Schwarz also spoke of the difficulty in recognizing, from the descriptions, the North American species of *Pityophthorus* and pointed out that only secondary sexual characters seemed to offer a satisfactory criterion for the separation of many closely allied species. The *Pityophthorus* so common under bark of Liquid Amber is not *P. annectens* as formerly assumed by him, but is identical with the species occurring under bark of Sumach, and which is named in collections *P. consimilis*. Discussed by Messrs. Riley and Schwarz.

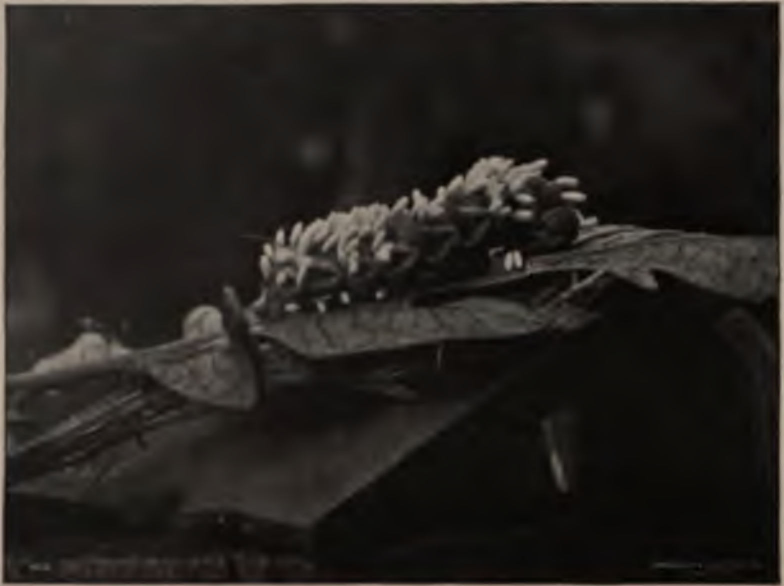
Prof. Riley introduced the question of what, strictly speaking, is a cocoon, and said that he was strongly of the opinion that this term should not be applied to cells formed by the hollowing out of plant substances, such as the end, stalk or crown of plants, or to cells made in the earth. The word "cocoon," he stated, should signify a structure composed more or less of silk or gluten. The others could be more strictly termed pupal cells or cradles.

C. L. Marlatt,
*Recording Secretary.*

## OBITUARY

Edward Burgess.—"Edward Burgess, the well-known entomologist and yacht designer, died at Boston the early part of July, 1891. He was forty-three years old at the time of his death. After graduating at Harvard in 1871, he was instructor in entomology for some time, and became well known as a student of the Diptera. He published a number of descriptive papers, and brought together a large collection. He also became interested in insect anatomy, and published several admirable papers upon this subject. His anatomy of the milk-weed butterfly, published in the Memoirs of the Boston Society of Natural History is a most admirable paper, and a positive contribution to knowledge."

Entomological News for September was mailed September 2, 1891.



Hymenopterous Parasites.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. NOVEMBER, 1891. No. 9.

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## On the method of Spinning the Cocoon in a certain species of the Ichneumonidæ. See Pl. VIII.

By M. W. VAN DENBURG, A.M., M.D., Fort Edward, N. Y.

The larva on which there was already one set of cocoons when captured, belonged, apparently, to the Sphingidæ, was a little over two inches long, and had a crop of twenty-five or thirty cocoons already scattered along its sides. It probably fed on a frost grape vine, where it was captured.

Two or three days subsequent to its capture, a fresh crop of parasites were discovered pushing their way into the outside world.

When this was first observed, all the stages were in progress—from boring beneath the skin to half woven cocoons. Subsequently many others appeared, and the whole stage from beginning to end was carefully watched.

At first the little white, semi-translucent worms could be seen working their way up from the deeper layers toward the surface of the opaque green of the host's tissues. When finally they reached the surface, immediately beneath the outer skin, by continual pressure of a sharp, but soft-pointed head, and so far as could be seen, by no gnawing or eating force, they finally succeeded in pushing through a very minute extremity.

This soon began to fill and enlarge by distention from within, as if the liquid contents were being forced into it from beneath the surface. When far enough advanced above the surface a distinct wriggling motion could be perceived. Finally, when free or nearly free, the process of spinning the cocoon began.

Bending over sidewise until the head of the little white grub touched the surface of its host, close to where the least fraction of its body still remained fastened in the hole whence it had emerged, the head begins to bob up and down, and from side to side, with a ceaseless regularity. With the naked eye this is all that can be seen, but under a glass enlarging four or five diameters, a very fine web is seen extending from the mouth; soon a fine open-meshed net begins to arise about the base and gradually increase in height. Each time the worm only touches the edge of the structure, which does not wholly surround the body, but reaches only a little more than half its circumference. Finally, the meshes are brought up to the full height of the erect grub and roofed in as high as it can reach.

The next step is not in all cases the same. Sometimes the open side is closed down to near the middle of the body, but more often the worm turns end for end, and begins industriously to spin the white opaque cocoon from the bottom. This it does by the same constant motion, bending to near the middle of the body with each sweep of the head and carrying it to the full length of extension. Soon the strokes grow shorter, the little creature is wholly immeshed and it turns round and round, up and down, changes ends again and again, until it can no longer be seen. Finally, after the inner glazing has been applied, it at lasts ceases its perpetual motion and passes into a well-earned sleep.

The cocoon will now be found slightly attached to the surface of the host by the loose meshes before described, and it may be removed with very little force.

Some variations from the above should be mentioned. Occasionally a grub will begin to spin the open meshes about himself by the time he has only half emerged into the outer world. The two processes then go on simultaneously. Again, another will not begin this work of spinning until wholly free from the hole through which it has forced its way. In this case it sometimes falls to the surface on which the host rests, and having no method of locomotion, begins to spin its cocoon where it chances to fall. This it can do as well lying on its side as when standing on end; only in the former case it passes the head from side to side, over the body, instead of up and down, as when perpendicular.

As to the time occupied in the various stages—from five to eight minutes elapse after the worm is first discovered beneath the skin until the small rounded head is seen above the surface of the skin. Not far from ten minutes are consumed in fully freeing the body, while the cocoon spinning goes on visibly for at least half an hour, and probably continues twice to four times as long in the privacy of its own chamber.

The first crop, the one upon the pupa when captured, hatched in about one week from the time it was taken. The second crop began to hatch on the tenth day from the time they first appeared.

Unfortunately, all the perfect insects of the first lot were lost; they were wholly black. Of the second lot some specimens accompany this paper. They all had yellowish legs, being conspicuously distinguished by these from the first to appear.

The first crop consisted of twenty-five to thirty-five cocoons; the second of upwards of fifty. It is worthy of remark that no visible mark or injury could be found under the glass at the points where the worms emerged from the surface of their host.

# TERIAS NICIPPE ON LONG ISLAND.

By RICHARD E. KUNZE, M.D.

On Sunday morning, August 2d, this year, a rainy and threatening kind of a day, I started off with a small *Catocala* net, ovoid in shape and only 5 x 8 inches in respective diameters. A friend of entomological aspiration whom I met, went with me. After spending two hours inspecting many trees of Long Island City in vain, we started off in another direction, which brought us to the edge of a swamp and low meadows, the water of which empties directly into the East River. By this time the sun came out hot. I suggested to take in the swamp, part of which was good cow pasture with a solitary thistle—*Cnicum pumilum* here and there on rising ground. On thistles I took a few *Papilio asterias* and *troilus*, also sometimes *thysbe*. Lower down as far as the wet meadow quantities of Hyssop—*Hyssopus officinalis*, Mountain Mint—*Pycnanthemum aristatum*, var. *hyssopifolium*, and Blue Vervain—*Verbena hastata*, were in bloom. Here I took many Pamphilæ, *Argynnis myrina*, a specimen of *Limenitis disippus* and a few *Colias philodice*, which swarmed around the plants of the mint family. All at once a—to me—very strange looking specimen with wings of a golden hue and of such contrast from the color of *Colias*, came out from the Alder bushes, that it attracted my attention at once. It had a jerky flight, like *Satyrus alope*, and gave me some work before I took it with that small net. Shortly after I started up another male of this same rare visitor and took the second *Terias nicippe*. About noon I saw a third male sipping moisture from the black mud along a cow path, and not wishing to soil the net, flushed it first, and, after a fruitless chase through mud and mire, lost it altogether, pursuit in that swamp of Alder—*Alnus serrulata*, being an impossibility.

Hungry and parched, we started homeward, and reaching high ground again, my companion, Mr. Louis Kohl, drew my attention to a very conspicuous white flowering shrub at a distance from us in another part of the swamp. Thither we started, and on the way, near edge of swamp, I saw for the first time the food-plant of the larva of *T. nicippe* in full bloom, which is American Senna—*Cassia marilandica*. With its masses of yellow, pea-flower shaped blossoms, it at first hid from my sight a female *T. nicippe*, which was inspecting its pinnate leaves in a fluttering, kind of a suggestive way. I gave the net to my friend and he took a perfect female at the first stroke of the net. We discovered no ova.

As we neared the white-flowering shrub, which proved to be Sweet-scented Pepperbush—*Clethra alnifolia*, we passed any number of *Cassia marilandica* from four to eight feet high, and which proved the centre of attraction of *T. nicippe*. These plants grew in submerged meadow land mostly along the edge of impassable jungle of *Rhus venenata*, *Alnus serrulata*, *Acer rubra* and a few *Clethra alnifolia*, intermingled with briars and the vines of *Clematis virginiana* and *Ampelopsis quinquefolia*. Most of these senna plants grew on the edge of a horseshoe-shaped piece of meadow, at the concave end of which stood the fragrant White Alder, or Pepperbush so called. This spot proved to be the El Dorado of the day. Countless numbers of insects visited it, mostly Hymenoptera, some Lepidoptera, and a few Coleoptera. Here I took *Hemaris thysbe*, *Pyrameis huntera*, *Eudamus tityrus*, *Danais archippus*, *Lycæna pseudargiolus* and also missed a *Papilio*. But while busying myself with the aforementioned I was three times surprised by specimens of *T. nicippe*, all males, which tried to fly past me in making the circuit of that horseshoe. Of these I took one more specimen which was slightly injured. When chased they would fly straight for the bushes and disappear.

It was so submerged a locality that I had to cover the grass with an armful of Alder brush, and which did not prevent the soles of shoes from being out of water. Trying as this was, the most vexed circumstance happened after handing my net to Mr. Kohl, wishing him to take a *nicippe*, which flew hard by. He chased the beauty until he landed knee-deep in a meadow hole full of water. With an exclamation more vigorous than virtuous, he returned the net without the prize. During this exciting episode, and while admiring the many forms of insect life visiting the showy, white racemes which terminated every branchlet, much like that of Larkspur (*Delphinium*) of the Pepperbush—a very rare and swift flyer appeared and hovered over the fragrant blossoms for a few seconds only. It was *Aellopos titan*, feeding within three feet of my eyes, and I with no net at hand. It was twice the size of a large *H. thysbe*, had clear wings with a very dark or blackish border, and a body as stout as that of a Smerinthid. In my anxiety to take it, I put one foot forward with cyanide bottle in hand, when, like lightning, it disappeared as suddenly as it came. Other Macroglossids came, but no more *titans*. My friend afterwards took a fine male *Chrysophanus thoe*, feeding on the flowers of Hyssop, in close proximity.

August 8th I returned to same locality with my largest net and stood for two hours in a broiling sun taking specimens from that Pepperbush. While thus engaged three more male *T. nicippe* came around the horseshoe curve and were all taken. At exactly 1.30 P. M. *A. titan* struck the opposite and unapproachable side of the Pepperbush again. I heard but did not see plainly enough which intruder it was. After a very few moments I recognized the object plainly as it took its swift departure.

Sunday, August 16th, myself and young friend returned to that sweet-scented Pepperbush early in the day and took turns watching it for rarities with nets of all sizes. Up to 1.30 P. M. took seven more fine specimens of *T. nicippe*, all flying close by to their food-plant (of the larva), and suggestive of their search for females. Of the whole number one, a female, was surprised examining the leaflets of *Cassia marilandica*. No ova were found. So much poison Sumach grew everywhere beside the Senna that I could not make a thorough search, it affects me with a fell virulence. My friend, Mr. L. Kohl, took a male *nicippe* out of that number on opposite side of swamps, where Hyssop was more plentiful than Senna bushes. There he captured another fine male of *Chrysophanus thoe*. The flight of *nicippe* is peculiarly low, a kind of zigzag sort of a way, which they persist in unless hard pursued. *S. alope* flies often higher, but otherwise not unlike this species of *Terias*. Three specimens, all males, made their escape that day, and with the exercise of a little more care there was no excuse that they got away except for the benefit of the species. Altogether, we captured fourteen specimens in Long Island City, all fresh looking and but one defective of the lot. No doubt exists in my mind that they were bred in this locality. It is reported that they have not been seen in large numbers since 1879 in this neighborhood.

Another word about *A. titan* and *Clethra alnifolia*. I watched from 11.30 A. M. up to 1.30 P. M. parched, sunburnt and mosquito-bit, gazing at the flowers of the White Alder and now past their prime, without having another glimpse of that southern Sphingid. I would advise all lovers of the flora and insect fauna to plant a sweet-scented Pepperbush in their garden. Although naturally found in swamps, it thrives well in any garden soil with sufficient sun and water to develop its growth. Most of the nurserymen have it on sale, and it will repay any naturalist for the trouble of cultivating this charming plant. In swamps it attains a height of eight feet, in gardens from four to five, and remains in full bloom for nearly five weeks. Its fragrance is widespread and delicious.

WHISKY IS BUG JUICE.—Peoria, Ill., September 24th. The Distillers and Cattle Feeding Company has been experimenting with the Takamine or Japanese process of making whisky. The distillers are so well pleased that they have decided to fit up the Manhattan Distillery with new machinery. The new plan greatly reduces the cost of manufacture. A queer feature is that a species of bug found on the rice is used instead of yeast for the fermenting process.—*Philadelphia Record*.

# A NEW PAMPHILA.

By HENRY SKINNER, M. D., Philadelphia.

*P. panoquinoides* n. sp.—Expands one inch. Color brown. Superiors have two minute fulvous spots on the subcostal nervules and a larger spot in the disc below these. Inferiors immaculate. Underside.—Superiors are same color as above, but of a lighter shade, with a patch of fulvous scales about one-eighth inch from base; the spots seen above are repeated, and there are two additional ones. One of these is V-shaped, and is the largest and situated between the first and second median nervules. The last spot is near the middle of the interior margin. The inferiors have a row of three white spots near the centre of the wing; they are half as wide as long. Head, thorax and abdomen same color as wings above, lighter beneath. Described from specimens from Key West, Fla. and Texas in the collection of I. C. Martindale, Esq. This species in color and size may be said to stand between *P. panoquin* and *P. fusca;* being smaller and darker than *panoquin* and larger and lighter than *fusca.* Approaches *panoquin* nearer than any other species, but has fewer and more indistinct markings. Looks very much like *panoquin* beneath.

———o———

# On the Genus Anæa Hb. (Paphia Westw.) of Our Country.

By B. NEUMOEGEN, New York.

There is evidently some misunderstanding about the classification of the two species of *Anæa* found in this country. W. H. Edwards, Prof. Scudder and Riley, and other authors have written on it, but the questions have never been satisfactorily settled.

According to W. H. Edwards' "Revised Catalogue," 1884, p. 45, *A.* (*paphia*) *troglodyta* Fabr.

= *astianax* Cr.
= *glycerium* Edw. (nec. Doubl.)
= *andria* Scud.

is found in our Western States, from Illinois to Texas and Neb.

I will herewith prove that the typical *troglodyta* is an insect flying in the Antilles, and that our species should correctly bear the name of *andria* Scud.

Dr. John Gundlach, who is an expert on the Lepidoptera of the West Indies, especially of Cuba and Puerto Rico, has sent me, repeatedly, in the last fifteen years, specimens identified by him as *troglodyta* Fabr. Dr. Staudinger received of the same specimens, which always proved to be uniform in coloring and appearance, and likewise determined them as *troglodyta* Fabr. Kirby, in his Catalogue, p. 276, gives "Jamaica" as the home of *troglodyta*. In 1888, Dr. Staudinger published that incomparable and beautifully illustrated work entitled, "Exotic Lepidoptera," by Dr. O. Staudinger and Dr. E. Schatz. Rhopalocera by Dr. Staudinger." On pages 177 and 178 of this work, referring to the revision of the genus *Anæa* by Druce, in the "Proceedings of the Zoological Society of London," 1877, Dr. Staudinger says the following :

"The genus *Anæa* is found throughout the whole dominion of the neotropical fauna from Southern Brazil to Mexico and the Antilles, one species even flying in the Southwestern States of the American Union, from Illinois to Texas. The American authors call it *troglodyta* Fabr. If *astianax* Cr., which is always given as a synonym of it, really belongs to it, then it is a similar species, exclusively flying in the Antilles, and this is the reason that Scudder, in 1875, named the North American species *andria* (= Ops. Druce, p. 177, 1877)."

On p. 178 he says:

"In Jamaica is found *A. troglodyta* Fabr., which I received directly from there, as well as from Sommer's collections from Hayti (Port au Prince) and Sta. Cruz. One specimen out of the collection of v. Schenck is marked 'Mexico,' but surely did not come from there, but from the Antilles. This *troglodyta* has a long-drawn, sharply-pointed apex of primaries, and the secondaries sharply dentated from anal angle to tail. The brown primaries in both sexes show beyond the centre a black, dentated, transverse line, and a darker marginal band. *A. andria* Scud. (= Ops. Druce, *troglodyta*, Edwards and Strecker) from the United States, resembles this insect, but the male does not show the transverse line; the female has it, but is in many ways different from *troglodyta*. *A. portia* Fabr., which I possess from Sommer's collections in Hayti (Domingo), as well as from Cuba, I cannot, according to the specimens which I possess, separate as a species from *troglodyta*, although the black transverse line of the male is nearly extinct. According to the descriptions of Fabricius, who gives as habitat of both species 'America,' there is a slight possibility that *portia* may be the Antilles form and *troglodyta* the North American, but it can never be decided with certainty."

Now, according to what Dr. Staudinger, Dr. Gundlach, W. F. Kirby and Druce, all good authorities, say, on this point, the home of *troglodyta* is the Antilles, and our North American representative is a different insect, which should bear the name of *andria* Scud.

I, for my part, can only add that on a first, even superficial glance, every body can at once see that the West Indian insect *troglodyta* is entirely different from ours. A bright, reddish brown color well marked, transverse lines and bands, the anal part of margin of secondaries, well scalloped and longer tails, show it conclusively.

*A. Morrisonii* Edw., of which I possess the types, is nearer to *troglodyta* than *andria*, but a smaller insect, of duller brown, and with slight indications only of the transverse line of primaries.

All the European authors have adhered to the name of *Anæa* Hüb., instead of *Paphia*, and I do not see why we should not follow in their footsteps. I, therefore, propose that in the new Check List of North America Lepidoptera the names stand:

*Anæa* Hüb.
*andria* Scud.
  =*glycerium* Edw. 1871 (nec. Doubl.).
  = Ops. Druce, 1877.
    Western States, Illinois to Nebraska.
*Morrisonii* Edw.
    Arizona, Mexico.

———o———

## ELEMENTARY ENTOMOLOGY.

In studying Lepidoptera it is necessary to have a knowledge of certain anatomical details which can only be learned from inseption and dissection of the specimens themselves. The classification is based on the difference in structure of various parts—as the head, body, legs, antennæ, and venation of the wings. Slight changes in these parts separate them into families, genera and species. Size and coloration are also taken into account, and are good characters, although subject to individual variation.

The Rhopalocera, or Diurnals, are divided into four families: the Nympalidæ, Lycænidæ, Papilionidæ and Hesperidæ. The first family mentioned is the most extensive one, containing the greatest number of species. The butterflies in this family may be distinguished from the others by the structure of the front legs in both sexes, which, on examination, will be found to be aborted or atrophied. The chrysalids of the butterflies of this family are suspended by the tail and hang downward. "Although other families contain butterflies which vie with the Nymphalidæ in lustrous beauty, this largest family contains upon the whole by far the greatest number and variety of striking forms, whether we consider the butterfly, the egg, the caterpillar, or the chrysalis. Moreover, they are the forms which are most commonly seen and noticed by those who have but a popular interest in natural history, for they are the butterflies *par excellence* of the temperate zone, of the region where civilization has most flourished and the praises of Nature have been most sounded by the poets. It is from the transformation of this group of butterflies that ancient mythology has drawn inspiration. The very name chrysalis, the 'golden thing' of the Greeks, was drawn from observation of this family, where alone the pupa often assumes a golden hue. And it is not strange that they should have so observed them, for of all butterflies these are the most spritely and vivacious, the most audacious, most fond of propinquity to man and his cultivations. and endowed with most varied psychological traits."*

The Nymphalidæ are divided into four subfamilies: the Satyrinæ, Euplœinæ, Nymphalinæ and Libytheinæ. These further divisions are characterized as follows: In the Satyrinæ some of the nervures of the forewings are swollen at the base, and the palpi are slender, compressed, heavily fringed with long scale-hairs. In the Euplœinæ none of the nervures are swollen; palpi rather stout, not greatly compressed, the fringe slight, short and delicate; antennæ naked. The Nymphalinæ have the palpi not so long as the thorax; fore legs of both sexes atrophied and imperfect. In the Libytheinæ have the palpi much longer than the thorax; fore legs of male atrophied, of female normal, except in being shorter than the others. The family Lycænidæ is made up of small and delicate butterflies of generally bright color and delicate wings. The structure of the fore legs this family stands midway between the Nymphalidæ and the Papilionidæ. The fore legs of the female are always perfectly formed, though usually slightly smaller than the middle pair; while those of the male are always more or less atrophied, yet never to the extent that prevails among the Nymphalidæ. The family Lycænidæ is divided into two subfamilies: the Lemoniinæ and Lycæninæ. The Lemoniinæ are distinguished by having the labial palpi minute, only the minute apical joint surpassing the face; fore wings provided with a distinct internal nervure; hind wings scarcely channeled to receive the abdomen, furnished with a precostal nervure, the costal nervure only running to the middle of the costal margin; fore tarsi of male, with rare exceptions, without spines or claws. The Lycæninæ have the labial palpi well developed, porrect, half or more of the middle joint surpassing the face; fore wings with excessively brief, hardly perceptible, internal nervure; hind wings channeled on basal half to receive the abdomen, without a precostal nervure, the costal nervure running nearly to the end of the costal margin; fore tarsi of male armed abundantly beneath and at tip with spines. [This article is largely made up from the excellent treatise on classification in Scudder's "Butterflies of the Eastern United States and Canada."]—ED.

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* Butterflies of the Eastern United States and Canada.—S. H. Scudder.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**In the future all papers received for publication in the News will be printed according to date of reception.**

THE following may perhaps be of interest to the readers of the ENTOMOLOGICAL NEWS, especially to any such as are particularly interested in the Dragon Fly and its life habits. It is concerning the time required for the nymph forms of the larger species of *Æschna* to mature. According to all the writings by entomologists to which I have had access, little is definitely known about this part of the subiect. Some of them, and among them Packard claims that two or three years is required for the growth of the nymph from the time it hatches from the egg until the winged form appears. During the past Summer I had an opportunity to settle this point as far as the species *Anax junius* is concerned. In Franklin Park, in this city (Columbus, O.), a small lake was dug last Winter in a place which was before entirely dry and well drained, and during the last of April and the first of May this lake was filled with water from the city water-works pipes, which I am sure contain do dragon fly nymphs; and on the 30th day of August last, the shores of this artificial lake were literally lined with the exuvia of *Anax junius* nymphs; so they could not have been older than four months at the utmost. I saw the first *Anax junius* flying in the last week of April, and I think I am safe in saying that none appeared much earlier, as I was on a special lookout for them.

PAUL FISCHER, Columbus, O.

CANNIBALISTIC HABITS OF THE CRICKET.—In the "Canadian Entomologist," vol. xxiii, p. 137, Mr. Wm. Brodie cites several cases of cannibalism that came under his notice. My attention was first called to the cannibalistic habits of the cricket some four years ago while bass fishing in the upper Delaware River. Wishing to make an early start, I had taken the precaution to secure my bait the evening previous; part of the bait consisted of about fifty large crickets, which I placed in a good-sized tin-box; the next morning I was surprised to find only thirty-five live crickets in the box, with the legs, heads and other hard parts of the missing fifteen. The day selected for fishing turned out to be a rainy one, so our trip was postponed; the box of crickets was laid aside, and the next morning on examining the contents of the box I was not surprised to find about ten more missing. I now determined to use the remaining crickets for an experiment; I kept the box in my room, and on several occasions on approaching the box very carefully and peeping in, I would be rewarded for my trouble by sights of cannibalism. In a week or ten days I removed the contents of the box, which consisted of some eight or ten large, fat crickets, and an innumerable mass of legs, heads and other hard parts of crickets. In this case it was no doubt the survival of the fittest (or fattest), the stronger overcoming the weaker.—PHILIP LAURENT.

INSECTS BLOCK THE TRACK.—Syracuse, N. Y., May 31st. South of Brighton Corners, between this place and Jamesville, on the D., L. and W. R. R. are extensive limestone quarries, which have been in operation for many years, and have penetrated deeply into the rock. Through the cut thus made, and into the quarries a branch track has been laid from the Lackawanna road for the accommodation of the hewn stone. Night work being necessary, a large part of the time, an arc light has been placed high over the track at the darkest part of the cut.

Several cars were loaded with stone for shipment on Friday and left on the switch, pending the observation of Memorial Day. To-night in preparation for drawing the cars out, the electric light was cut in and an engine with the necessary crew left from the city for the quarries. Upon reaching the cut the track was found to be covered for sixty feet on either side with strange insects of immense proportions. The swarm was so great that the engine became stallen, the rails having become so slippery from the crushed insects. Examination of the new insects shows a resemblance to what is known as the electric light bug, though the new comer is much larger.

The outer shell of the back is about the size and shape of half an egg-shell, which, when crushed by the engine wheels, gave out a crackling sound like the explosion of a toy torpedo. The shell is black, of a slatey structure and very brittle. It is supposed to be a species of lithedome—a rock-boring mollusk—crossed with some kind of predatory insects.

To secure the shipment of the freight to-night it became necessary to let the loaded train from above in the quarry come down the grade of the cut. Gathering momentum all the time, its impetus, when it came to the obstruction, carried it by the bugs.—*Boston Daily Traveller.*

SPRAYED GRAPES ARE HARMLESS.—Albany, September 29th. State Entomologist, John A. Lintner, regards the recent activity of New York City's Board of Health as misdirected, and thinks the grape growers and dealers whose grapes were seized and condemned, have a good cause of action against the health officers. He declares that the grapes were not poisoned, and those having the most suspicious spots could have been dipped in a solution of water and vinegar and thoroughly cleansed.

Prof. Lintner says that last Winter he met the grapegrowers of the Hudson Valley, and together they discussed the best methods of killing insects that infest grape-vines, and decided in favor of this Bordeaux mixture. Its only bad feature was that it clung to the grapes after maturity. The mixture contains copper, but in such minute quantities that a person would have to eat a ton of grapes to get enough poison in his system to kill him. Hence he considers the wholesale destruction of the grapes in New York City as foolish in the extreme and not warranted by any consideration for the public health.—*Evening Star.*

"IN NATURE," notes Mr. R. T. Lewis, on the authority of a correspondent in whose trustworthiness he has entire confidence, gives a curious account of the appreciation with which the song of the *Cicada* is heard by insects other than those of its own genus. The correspondent has frequently observed in Natal that when the *Cicada* is singing its loudest, in the hottest portion of the day, it is attended by a number of other insects with lovely gauze-like, irridescent wings, whose demeanor has left no doubt on his mind that the music is the attraction. The *Cicada*, when singing, usually stations itself upon the trunk of a tree with its head uppermost, and the insects in question, to the number sometimes of fifteen or sixteen, form themselves into a rough semicircle at a short distance around its head. During a performance one of the insects was observed occasionally approach the *Cicada* and to touch it upon its front leg or antennæ, which proceeding was resented by a vigorous stroke of the foot by the *Cicada*, without, however, any cessation of its song. The insects composing the audience are extremely active; and so wary that they take flight at the least alarm on the too near approach of any intruder. Some of them, however, have been captured; and on examination these proved to belong to the same family as that most beautiful of British insects—the lace-wing fly, which, indeed, they closely resemble, except as to size, their measurement across the expanded wings being a little over two inches; they have since been identified by Mr. Kirby at the British Museum as *Nothochrysa gigantea*.

THE PLAGUE OF LOCUSTS IN ALGERIA.—Sir Lambert Playfair in his last report on Algerian agriculture remarks on the spread of locusts from the eastern part of the province, to which they had hitherto for the most part confined their ravages, to the central regions. Until the eminent entomologist, D'Herculais, studied the matter carefully, no specific distinction amongst the locust was recognized. He has now shown that there are two species, belonging to separate genera, each of which has very marked peculiarities. These are, the best known or the Biblical species, *Acridium perligrinum*, and the *Stauronotus maroccanus*. Their habits are quite different; the former generally arriving suddenly about April or May, in immense flights, and devastating the green crops. The females penetrate deeply into the moist earth and deposit their eggs, from 80 to 90 in number, enclosed in a cocoon. Two months afterwards the young locusts or crickets are hatched; they grow rapidly, get their wings in 45 days, and then continue their career of devastation far in advance. The other species appear in a winged state in July and August; they also ravage what green exists at that season, and the females deposit their eggs at a much less depth than the others, generally on rocky ground. The cocoons do not contain more than 30 or 40 eggs, and they remain without being hatched till the Spring of the following year. The first species finds in Central Africa the most favorable circumstances for its development; the second, in more temperate countries, such as the Mediterranean region, and even the Caucasus, Crimea and Asia Minor. It is the latter that has ravaged Algeria during the last few years, but about the middle of December last the arrival of flights of the *Acridium* was reported from several of the oases of the extreme south.

Fortunately, man is not the only enemy of the locust. Starlings and Larks feed eagerly on the eggs; wagon-loads of these birds used constantly to be sent to the French market, but now the killing of them has been prohibited in the province of Constantine. The larvæ of the *Bombyx cantharis* and other insects, also get into the cocoons, and often kill from ten to fifty per cent. of the eggs, while minute cryptogamic organisms destroy many more. The best method of contending against the locust has been very carefully studied. Much has been accomplished by ploughing the ground deeply as soon as possible after the eggs have been laid, so as to bring them to the surface, and thus allow them to become an easy prey to birds and insects.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Address all packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

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## Entomological Literature.

Lepidoptera Heterocera in the British Museum part 8.—Illustrations of typical specimens of Lepidoptera-Heterocera in the collection of the British Museum. The Lepidoptera-Heterocera of the Nilgiri district, by George Francis Hampson, 144 pp. plates 139 to 156. These are fine colored lithographic plates, and contain many figures.

The Annals and Magazine of Natural History, vol. viii, No. 45.—Descriptions of two new species of Lycænidæ from West Africa, in the collection of Mr. Philip Crowley, by Emily Mary Sharpe.

Memoirs and Proceedings of the Manchester Literary and Philosophical Society, 1890–91.—Hymenoptera Orientalis; or, Contributions to a knowledge of the Hymenoptera of the Oriental zoological region, by P. Cameron.

Journal of the Asiatic Society of Bengal, vol. lix, pt. 2, Suppl. No. 2.—Catalogue of the Insecta of the Oriental region. No. 4, Order Coleoptera, Families Dytiscidæ, Gyrinidæ, Paussidæ, Hydrophilidæ, Silphidæ, Corylophidæ, Scydmænidæ, Pselaphidæ, Staphylinidæ. Vol. lx, Part 2, No. 1. A list of butterflies of Engano, with some remarks on the Danaidæ, by William Doherty, Cincinnati, U. S. A. New and rare Lycænidæ, by William Doherty.

The Report of the State Horticultural Association of Pennsylvania contains "A pen sketch (with portrait) of Dr. S. S. Rathvon, Professor of Entomology," by T. W. Goding, Rutland, Ill.

On a Bacterial Disease by S. A. Forbes, Ph. D. (reprint from the "North American Practitioner," September, 1891.) The paper describes the internal anatomy of the chinch bug *Blissus leucopterus*, and gives an account of the *Micrococcus insectorum* which is found in the alimentary canal. This subject of bacterial disease is a very interesting and important one not only to the economic entomologist, but to the general bacteriologist.

Le Naturaliste (Paris), Sept. 1, 1891.—Some different galls produced by Acarines on vegetables, by M. Menegaux, figs. Description of a new *Hecatera*, by P. Dognin.

BULLETIN OF THE OHIO AGRICULTURAL EXPERIMENT STATION, vol. iv, No. 5.—This contains an article on the wheat midge, *Diplosis tritici* Kby., by Prof. F. M. Webster. Figures are given of the insect, its stages and anatomy, and a complete history of its ravages, etc., in various parts of the country.

INDEX TO THE KNOWN FOSSIL INSECTS OF THE WORLD, including Myriapods and Arachnids, by Samuel H. Scudder.—This is Bulletin of the U. S. Geological Survey, No. 71. This is a large work of 744 pages, and the author states that he believes it to be practically complete, and says: " With the view of furthering study in the too neglected field of fossil insects, I transmit for publication the card catalogue of described fossil insects which I have used for twenty years, and kept constantly up to date." The great value of this book as a work of reference can be seen at a glance, and all workers in this field as well as entomologists in general, are indebted to Mr. Scudder, whose industry and talent as a writer are phenomenal.

BULLETIN DE LA SOCIETE PHILOMATHIQUE DE PARIS (8), III, 3, 1891.—Patellary Glands of Araneids, by P. Gaubert.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE (Lille), September, 1891. —On the presence of *Cecidomyia sisymbrii* Schk. at Chinon, by Dr. H. Fockeu.

JOURNAL DE L'ANATOMIE ET DE LA PHYSIOLOGIE NORMALES ET PATHOLOGIQUES, etc., xxvii, 3, Paris, 1891.—Abstract genealogy of Arthropods: Determination of the typical forms, (concluded), by A. Segond

ZEITSCHRIFT FUR WISSENSCHAFTLICHE MIKROSCOPIE UND FUR MIKROSCOPISCHE TECHNIK, viii, 2, Braunschweig, 1891.—Methods in embryological researches on insect eggs, by Dr. H. Henking.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Aug. 1, 1891.—List of the Carabidæ (order Coleoptera) obtained by Pere Cardon in Bengal, and chiefly from Chota-Nagpore,* by H. W. Bates. Contributions to the Belgian fauna (Hemiptera, Coleoptera), by A. J. F. Fokker. Dichotomous tables for the determination of the Belgian species of Coleoptera Heteromera, by L. Coucke.

BULLETIN DE LA SOCIETE LINNEENNE DE NORMANDIE (4), v, 2, Caen, 1891.—The *Anthonomus* of the apple tree, by E. Lecoeur; 1 pl. The use of tarred bands against the caterpillars of *Chematobia*, id.

ARCHIV FUR NATURGESCHICHTE, lvii, I Bd., 2 heft, Berlin, July, 1891. —The sound apparatus of the Dytiscidæ, by H. Reeker; 1 pl. Description of a hermaphrodite Arthropod, by Dr. P. Bertkau; 1 pl. (a *Lycosa*).

IL NATURALISTA SICILIANO (Palermo), August and September, 1891.—Catalogues of the Coleoptera of Sicily,* by E. Ragusa.

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* Contains new species other than North American.

LE NATURALISTE (Paris), No. 110, Nov. 1, 1891.—The tertiary insects f North America from the works of M. Scudder, by Dr. E. Trouessart. he wandering cricket, *Acridium pelegrinum* (concluded), by C. Brongiart.

JAHRESHEFTE DES VEREINS FUR VATERLANDISCHE NATURKUNDE IN VURTTEMBERG, xlvii, Stuttgart, 1891.—On some *Thrips* injurious to rain, by Dr. E. Hofmann. Roser's Hemipterous fauna of Wurttemberg, ublished by Dr. T. Hueber.

ANALES DE LA SOCIEDAD CIENTIFICA ARGENTINA, xxxii, No. 1, Buenos Ayres, July, 1891.—*Dyscophus onthophagus*, a new cavern-dwelling cricket from Uruguay, by Dr. C. Berg, No. 2, August, 1891. Argenine Dipterology (Syrphidæ), by F. L. Arribalzaga (to be continued).

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, JAHRGANG 1891, 1 heft, Berlin, June, 1891.—A new Lucanid of the group Cladognathidæ from Java,* On *Sclerostomus fasciatus* Germain, by G. Albers. Description of the larva and the female of *Homalisus suturalis*, by Dr. P. Bertkau; 1 pl. *Cochliophorus* nov. gen. of Meloidæ,* by K. Escherich. List of the Snout Beetles collected near Djizak, Tschimkent and Nauka,* by J. Faust. [Additions] to the list of German beetles,* by K. Fuegner. Collecting notes for 1890, by J. Gerhardt (Coleoptera). Rectification of the hitherto described species of *Castalia*, by Dr. K. M. Heller; *Microcastalia* n. g. Remarks on Herr Wilkins' work on the Cicindelidæ of Turkestan, by W. Horn. *Cicindela inscripta* Zoubk. new to Europe, *Cetonia floricola* var. *Fausti*, *Smaragdesthes subsuturalis* n. sp. from Congo, *Ptyllopertha humeralis* n. sp. from Asia Minor, On the Greek *Trichophorus Schaumi* Cand., On *Diacanthus sulcatus* Cand. from Silesia, On the African Cetonid genus *Stethodesma* Bainbr., On *Tmesorrhina concolor* Westw. and allied species,* On A. Kuwert's Identification table of European Coleoptera, xxii, heft, Heteroceridæ, On the genus *Kraatzia* Fel de Saulcy. The varieties of *Trichius rosaceus* Voet., *T. gallicus* Heer, *T. fasciatus* L., all by Dr. G. Kraatz. Systematic review of the species and genera of Passalidæ, by A. Kuwert. New Coleoptera from Europa, the surrounding countries and Siberia, with remarks on known species, twelfth part, The true Cetonid genera and the species known to me from Europe and the surrounding countries,* by E. Reitter. *Leistus elegans* n. sp.,* by C. Rost. Supplement to the Thuringian beetle fauna, by C. Schenkling. Sixth contribution to the knowledge of the German beetle fauna, by J. Schilsky. Revision of the palaearctic species of the Elaterid genus *Agriotes* Eschsch.;* 2 plates, Two new Elaterids from Syria and Madagascar, by O. Schwarz. A new East African Cicindela, by A. Srnka. *Brumus trivittatus* n. sp. from the Suaheli coast, *Trachodius tibialis* n. sp. from Macugnaga, Known and new Chrysomelidæ from Spain I, How many species does the genus *Sclerophædon* contain?, On varieties of *Phytodecta*, all by J. Weise.

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* Contains new species other than North American.

ENTOMOLOGISCHE NACHRICHTEN, xvii, 17, Berlin, September, 1891.—*Osmia* studies,* by H. Friese; figs. Two new South American Libellulidæ, by Dr. F. Karsch; *Platyplax* n. gen. *Pimpla* species from Nordérney and three new varieties,* by C. Verhoeff. No. 18, Sept. 1891. Criticism of the system of the Aeschnidæ,* Dr. F. Karsch.

LE NATURALISTE (Paris), Sept. 15, 1891.—Description of a new Lepidopter,* by P. Dognin.

SPECIES DES HYMENOPTERES D'EUROPE ET D'ALGERIE FONDE PAR EDMOND ANDRE ET CONTINUE SOUS LA DIRECTION SCIENTIFIQUE DE ERNEST ANDRE, 39e Fascicule, July 1, 1891, forming pp. 1-88 of tome vi, Chrysides,* by Robert du Buysson; 2 plates. 40e Fascicule, Oct. 1, 1891, forming pp. 57-136 of tome v; 2 plates.

ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE, 2e Serie, ix, 3, Paris, 1891.—Studies on the blood and the lymphatic glands in the animal series (second memoir), by L. Cuenot; plates. This memoir includes the insects.

BULLETINS DE LA SOCIETE ZOOLOGIQUE DE FRANCE (Paris), xvi, No. 1, January, 1891.—An error of the senses in a Lepidopter, by Dr. R. Blanchard.—No. 2, February. On the Pseudo-parasitism of the larvæ of *Culex pipiens*, by Dr. R. Blanchard. New or little-known Diptera [*Hæmatopota*], by J. M. F. Bigot.—No. 4, April. List of the Arachnids collected by M. Ch. Rabot in western Siberia in 1890, and Descriptions of some Arachnids from Costa Rica from M. A. Getaz, of Geneva, by E. Simon; *Cupiennius* n. g.—No. 6, June. Descriptions of two new species of Arachnids collected by Dr. R. Blanchard in the Sahara,* by E. Simon.

MEMOIRES DE LA SOCIETE ZOOLOGIQUE DE FRANCE, iv, 1, 2, 1891.—Coleoptera collected in the Azores by M. J. de Guerne during the voyages of the yacht "Hirondelle" (1887-88), by C. Allaud.

MEMOIRES DE LA SOCIETE DES SCIENCES PHYSIQUES ET NATURELLES DE BORDEAUX, 3e Serie, v, 2, 1890.—Hermann Mueller and the coloration of the collecting apparatus of bees, by M. J. Perez.

NOUVELLES ARCHIVES DU MUSEUM D'HISTOIRE NATURELLE (Paris), 3e Serie, II, 2, 1890.—The collection of insects formed in Indo-China by M. Pavie, French consul at Cambodia: I Coleoptera, Cebrionidæ, Rhipidoceridæ, Dascillidæ,* and Malacodermidæ,* by M. J. Bourgeois; Clytidæ* and Eumolpidæ,* by E. Lefevre; Diptera,* by J. M. F. Bigot.

ATTI DELLA R. ACCADEMIA DELLE SCIENZE DI TORINO, xxv, disp. 9a, 1889-90.—Diagnoses of some new species of Diptera,* by Dr. E. Giglio-Tos.

ENTOMOLOGISCHE NACHRICHTEN, xvii, No. 19, October, 1891.—List of the Sphingidæ collected by Dr. Paul Preuss at Barombi Station in Cameroon,* by Dr. F. Karsch; 1 plate. Tryphonid studies,* by Dr. Kriechbaumer.

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* Contains new species other than North American.

ZOOLOGISCHER ANZEIGER (Leipzig), Aug. 31, 1891.—On the embryology of insects, by V. Graber.

MORPHOLOGISCHES JAHRBUCH (Leipzig), xvii, 3, 1891. On the morphological significance of the ventral abdominal appendages of insect embryos, by V. Graber; figs.

VERHANDLUNGEN DER K. K. ZOOLOGISCH-BOTANISCHEN GESELLSCHAFT IN WIEN, xli, Bd., I Quartal. April, 1891.—Additamenta to the monograph of the Phaneropteridæ,*† by C. Brunner v. Wattenwyl; 2 plates; a paper of 196 pages, describing many new genera and species. On noteworthy forms among Acarids,* by Dr. L. Karpelles, 6 zincographs.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Sept. 5, '91.—Curculionidæ and Brenthidæ from western Bengal, collected by R. P. Cardon, with descriptions of new species,*† by M. J. Desbrochers des Loges. Melanges Entomologiques: V. Diagnoses of Coleoptera from the Congo.*† VI. Diagnoses of Phytophaga from Madagascar,* by A. Duvivier. Third Dichotomous table to aid in determining Belgian species of Coleoptera Heteromera, by L. Coucke.

XXXVI UND XXXVII BERICHT DES VEREINS FUR NATURKUNDE ZU KASSEL, 1891.—Lepidopterology: On the local fauna of Cassel and vicinity, by L. Knatz. Observations on the development history of *Coleophora gryphipennella* Hbn., by Dr. H. F. Kessler. The development history of *Tribolium ferrugineum* Fab., ibid.

VERHANDLUNGEN DES VEREINS FUR NATURWISSENSCHAFTLICHE UNTERHALTUNG ZU HAMBURG, 1886–90. Hamburg, 1891.—Contributions to fauna of the lower Elbe: New and rare beetles, by T. Wimmel and R. Niemeyer; On beetles imported with drugs, by T. Wimmel; Additions to the list of macrolepidoptera of the lower Elbe, by J. C. H. Zimmermann; On the occurrence of *Panthea cœnobita* in this locality, by H. Burmeister; On *Plusia illustris*, by R. Schmidt; My prey at Eulen in 1890 [Lepidoptera]. by G. Jaeschke; Additions to the Lepidopterous fauna of the lower Elbe, by A. Sauber; The Lepidopterous fauna of Horn and vicinity, by A. Junge; Entomological brevities [Lepidoptera], ibid.

## Doings of Societies.

A REGULAR STATED MEETING OF THE ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES was held Sept. 24, 1891, at the hall S. W. cor. Nineteenth and Race Streets, Dr. Horn, Director, presiding. Meeting called to order at 8.20 P.M. Members present: Martindale, Cresson, Welles, Ridings, Skinner and Laurent. Associates: Bland, Seeber, Westcott, Fox, Liebeck, Johnson, Dr. Castle and Haimbach. Mr. Martindale spoke of the great scarcity of Lepidoptera during the past

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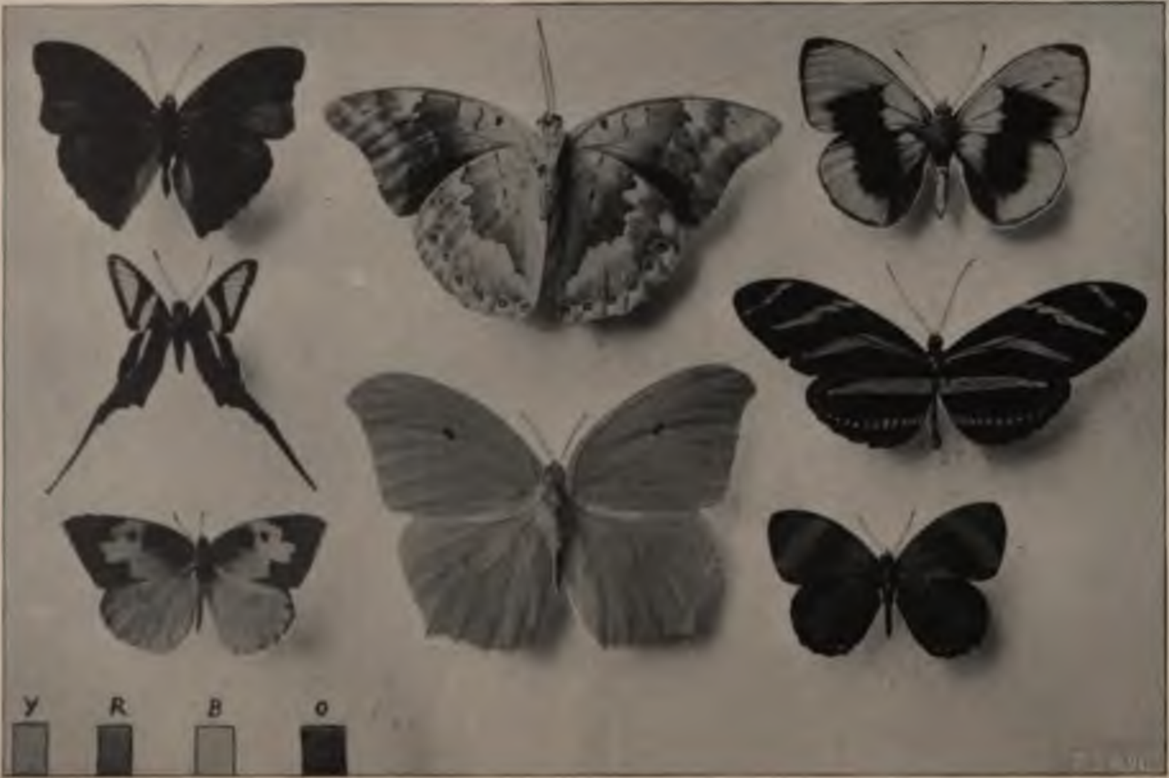
* Contains new species other than North American. † Contains new genera.

Summer, both in the field and at the electric lights. He had caught two specimens of *Terias nicippe* and a female of *Pamphila campestris* in Fairmount Park. Both of these species are rare here, the latter being exceedingly rare. Dr. Castle stated that he had visited his old locality for *Blaps similis* at Alexandria, Va., and had not found any owing to trenches having been dug in the immediate neighborhood and filled with boiling water. Mr. Welles had found *Lycomorphus pholus* very abundant at Elwyn, Delaware County, Pa. Dr. Skinner exhibited the insects collected by Mr. Mengel and Dr. Hughes on the west coast of Greenland. There were about 25 specimens of Hymenoptera, 166 Diptera, 8 Coleoptera, 106 butterflies and 143 moths. Mr. Seeber exhibited and presented 260 Hymenoptera, 65 Diptera and 2 Neuroptera, all taken in and around the city. He had found that in using a cyanide bottle that constantly opening it greatly deteriorated its killing qualities, and in the future he intended to try ether, as he could then replenish the killing bottle with ether when necessary. Dr. Horn said that his work on *Agrilus* was finished, and he exhibited all the known species of our faunal limits, 54 species all told, 22 of which were described as new. He had dealt with but one unique; most species were exceedingly well represented. They are readily separated into groups by pretty good characters. Some of the characters noted and described were new. He also stated that he had recently been studying *Amara* and some other things. Mr. Westcott spoke of the good luck he had had in collecting moths at sugar, etc., but had found diurnals very scarce. Mr. Nathan Banks, of Washington, was proposed as an associate of the Section.—H. SKINNER, *Recorder*.

## OBITUARY

EDWARD W. JANSON, died in London, Sept. 14, 1891, aged 69. He was especially known to entomologists as a dealer in insects, boxes and appliances. While he possessed skill and judgment as an entomologist, he has written but little, preferring to devote his talents to the assistance of others. He possessed what is probably the best collection of Elateridæ known, having acquired the first typical series from Dr. Candéze by purchase. His library was very full, and was especially rich in pamphlets.

ENTOMOLOGICAL NEWS for October was mailed September 29, 1891.



HARMA SANGARIS.
LEPTOCIRCUS CURIUS.
COLIAS CÆSONIA.

PREPONA DEMOPHON.
GONEPTERYX MÆRULA.

CALLITHEA SAPPHIRA.
HELICONIUS CHARITONIA.
CATAGRAMMA PITHEAS.

A SUGGESTION FOR A POSSIBLE METHOD OF IDENTIFYING THE COLORS PHOTOGRAPHED.

NEGATIVE BY JULIUS F. SACHSE.
IVES' PROCESS, ENGRAVED BY CROSSCUP & WEST.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. II. DECEMBER, 1891. No. 10.

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Our illustration represents some butterflies which were photographed to see if the colors could be identified by a color key. The possibility of this has been investigated by Mr. J. F. Sachse, editor of the "American Journal of Photography," who read a paper on the subject before the Photographic Society of Philadelphia entitled. "A Suggestion for a Possible Method of Identifying Colors Photographed." It can readily be seen how useful such a method would be in the illustration of Natural History objects.

We quote from the paper above referred to "The production of orthochromatic or color-stained plates, which will yield negatives or prints giving approximately true color values is at present one of the active problems of the photographic world, attracting the attention of specialists and active researchers in almost every country." Ever since the orthochromatic principle was first broached, the hope was fostered that by some means, in addition to giving true color value, it would become possible to find a method to distinguish or identify by the print the colors of the original. "In connection with this subject I wish to bring to your notice a suggestion for a simple method by which this much desired object may be obtained, at least under certain conditions in suitable subjects. The suggestion, as you will see, is simply to photograph a color key along with the subject, which shall explain itself. The first picture, a print of eight butterflies, selected on account of their varied colors, which comprised lemon-yellow, brilliant blue, blood-red, orange, bright red and black." The colors of the key are marked with letters which identify the colors, and by comparing the key with the colors of the print, the colors of the butterflies may be determined. We only have sufficient space to quote a few sentences from this interesting paper of Mr. Sachse, and will merely state that the paper attracted great attention, both here and abroad, and it has been translated into several languages and reprinted in some of the English photographic journals. This plate, like others we have published, was made by the Crosscup & West Company of Philadelphia, and we are indebted for the loan of the plate to the kindness of Mr. Sachse.

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## The Sphingidæ of Colorado.

By David Bruce.

1. *Hemaris* sp. ?—A small species, is not uncommon among yellow flowering *Ribes* in May and early June, near Denver and just in the foothills; it is very like *H. rubens* H. Edw., but is smaller; it agrees pretty well in size and color with Mr. Strecker's description of *H. senta*, and may be that species.

2. *Hemaris Brucei* French.—On blossoms of *Mertensia* in July, above 10,000 feet elevation near South Park; not common.

3. *Lepisesia flavofasciata* Barnst.—On flowers of *Ribes* in June, same places as last species; have taken the larva and bred it; it feeds on *Epilobium* in August; not common.

4. *Lepisesia Clarkiæ* Bdl.—Not rare in western Colorado in June; very partial to flowers of *Phlox* and allied plants, and when thus engaged, easy to capture.

5. *Amphion nessus* Cram.—Not uncommon in Clear Creek and Platte Cañons below 6000 feet elevation; fond of damp places by the sides of irrigating ditches, frequently alighting on mud; this habit I have not observed in any other of the Sphingidæ.

6. *Deilophila Chamoenerii* Harr.—Common throughout Colorado and frequent at light; I have found the larvæ on *Epilobium*.

7. *Deilephila lineata* Fab.—Abundant everywhere, flying by

day and night; I have found it on the mountain tops at 14,000 feet elevation, the larvæ sometimes occurring by thousands on low plants near north Denver in boggy places.

8. *Chærocampa tersa* Linn.—One example only, found on a window in the Union Depot, Denver, probably attracted by light.

9. *Philampelus achemon* Dru.—Larvæ very common on *Ampelopsis* and Grape from Denver City to about 7500 in the Cañons; the moth occasionally at light.

10. *Dilophonota ello* Linn.—Not rare at light from Denver to Utah, all I have taken in Colorado are rather light colored.

11. *Protoparce celeus* Burm.—Common all over the State, apparently getting more abundant every year, June and September, probably a part of the larva give moths the same season.

12. *Protoparce carolina* Linn.—Occasionally at light (Denver).

13. *Sphinx drupiferarum* S. & A.—Very common at light all over the State; the large form (var. *utahensis* H. Edw.) frequently in central and western Colorado; larvæ common on wild plum.

14. *Sphinx perelegans* Hy. Edw.—Uncommon at light in central and western Colorado; my examples are larger than California specimens.

15. *Sphinx vashti* Strecker.—Not rare; I have taken it wherever I have collected in the State east or west; varies in size and color. I have them from 2½ inches to 3⅝ inches in extent. I am not surprised that it has received several names.

16. *Sphinx gordius* Cram.—Not rare in central and western Colorado. I have never taken it near Denver; Colorado examples are very large (I have some extending four inches) and show the soft warm color of *luscitiosa*.

17. *Sphinx luscitiosa*.—Not very rare; at light and over flowers in the evening in Denver City. I have also taken it flying by day over flowers.

18. *Sphinx oreodaphne* Edw.—Common in central Colorado. Mr. Hy. Edwards saw several of my examples and identified them as the form he had so named; the Colorado specimens are a clear gray, with fine markings, and extend 3¼ to 3¾ inches. I have seen nothing in Colorado like the eastern *chersis*.

19. *Sphinx coloradus* Smith.—Not very rare in western Colorado. I have beaten it from Cedars and taken it at light. It is so variable in size and distinctness of markings that I think *S. Dollii* Neum. may be a small form of this species.

20. *Sphinx lugens* Wlk.—At light and over flowers at dusk; not uncommon round Denver.

21. *Triptogon occidentalis* H. Edw.—Common throughout the State; larvæ frequent on Poplars of any species. I have bred a great number; they are easily reared from the egg; have fed them on Cottonwood, in Denver, until half grown and then brought them home to New York State and gave them Willow until full-grown, with no evil result. *Smerinthus imperator* Strecker, if not a true species, deserves its name. This form is very robust, and the markings very distinct and high colored. I found a full grown larva on Cottonwood in August; it was very dark green compared with the larva of *occidentalis* (of which I had at the time many feeding) and larger than any I had before met with; this larva pupated, and, to my surprise, produced an imago, in September the same year, of the *imperator* form; it was a ♀ 5¼ inches in extent of wings. I have a ♂ precisely of the same stamp taken in west Colorado measuring 5⅛ inches in expanse. I have a series of the ordinary *occidentalis* form, all selected for their good size and color, and the difference between these and the *imperator* form is obvions enough.

22. *Smerinthus geminatus* Say.—Rather common throughout the State; the late brood has pale upper wings and the rose color on under wings is very bright.

23. *Smerinthus astarte* Strecker.—This insect is rather common on trunks of Cottonwoods and comes freely to light; it varies interminably in size, coloration and outline of upper wings. I have bred quite a number from the eggs, and occasionally found the full grown larva on *Populus angustifolia*, and in confinement it thrives best on that tree.

24. *Paonias excæcatus*,—Occasionally comes to light, but is not common; all I have seen are high colored.

25. *Paonias myops*.—Common throughout the State, comes freely to light and the larvæ frequent on Choke Cherry. I have not seen eastern examples so brightly colored as some I found in western Colorado.

There are decidedly two generations of the last four species every year.

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The damage to the cereal crops in Canada by insects has been estimated at $38,000,000.—(*Newspaper Entomology*.)

# Synonymical Notes in Spiders.

By NATHAN BANKS.

## DRASSIDÆ.

*Anyphæna rubra* Em. = *A.* (*clubiona*) *gracilis* Hentz.
*Pythonissa sericata* Koch. = *P.* (*herpyllus*) *bicolor* Hentz.

## AGALENIDÆ.

*Amaurobius sylvestris* Em. = *A.* (*ciniflo*) *bennetti* Blk.

## THERIDIDÆ.

*Theridium brassicæ* Fitch = *T. frondeum* Hentz.
*Theridium hypophyllum* Fitch = a ♂ *Dictyna.*

As it cannot be farther identified it may be dropped from the lists.

*Erigone zonaria* Keys = *Bathyphantes micaria* Em.

## EPEIRIDÆ.

*Epeira decipiens* Fitch = *E. displicata* Hentz.
*Epeira canadensis* Blk. = *Cyclosa conica* Pallas.
*Epeira approximata* Blk. = *E. trifolium* Hentz.
*Epeira rubella* Hentz = *E. directa* Hentz.
*Epeira spiculata* Hentz = *E. placida* Hentz.
*Tetragnatha armigera* Blk.

This is probably *T. laboriosa* Hentz; it certainly does not pertain to anything different from *T. grallator*, *T. extensa* and *T. laboriosa*, and so may be dropped from the lists. It cannot be recognized as different.

## LYCOSIDÆ.

*Lycosa nidicola* Em. = *R. babingtoni* Blk.
*Lycosa maritima* Hentz = *Trochosa cinerea* Fab.
*Pardosa albopatella* Em. = *P* (*Lycosa*) *minima* Keys.
*Pardosa nigra* Stone = *Aulonia ?* (*Lycosa*) *funerea* Hentz.

## ATTIDÆ.

*Icius vittatus* Keys = *Icius mitratus* Hentz.
*Salticus sundevalli* Blk. = *Marptusa familiaris* Hentz.

In my paper on "Hentz Spiders" in ENT. NEWS for May, 1891, *Dendryphantes capitatus* (Hentz) Peck. and *D. octavus* Hentz were so printed as to appear as distinct species; whereas, as might be observed from the text, it was intended that the former should stand as a synonym of the latter.

# HYMENOPTEROLOGICAL NOTES.—I.

By WILLIAM J. FOX, Phila., Pa.

**Larra aurantia** n. sp.

♀.—Black, the abdomen orange. Head and thorax with exceedingly fine, even punctures; front with a faintly impressed line, which begins at the base of antennæ and extend to the anterior ocellus, beginning again from a strong curved foveæ, behind the posterior ocelli, it extends to the top of the vertex; the space between the ocelli much swollen, with a deep, curved sulcus on each side, which almost connects with the foveæ behind the posterior ocelli; the face somewhat excavated on each side, behind the base of the antennæ; the anterior portion of the clypeus shining, strongly punctured, with a transverse furrow before its margin, which has an exceedingly slight tooth each side just before its lateral angles; eyes strongly converging towards the top, the distance between them at this point barely equal to the length of the second and third antennal joints united; antennæ shorter than head and thorax together, tapering to the apex, flagellum brownish, with a microscopic pile; scape short and stout, narrowed one-half towards the base, in length about equal to the third antennal joint, this latter joint is about four times longer than the preceding one, and about equal to the following joint, the fifth and sixth joints longest; scutellum and post-scutellum with a very faint medial impressed line; metathorax above finely roughened, with a few indistinct, longitudinal striæ at the base, the posterior face more strongly roughened, with a distinct medial sulcus, which is broadest basally, the furrow not reaching to the apex; wings fusco-hyaline, nervures dark, the distance between the first transverse-cubital nervure and the first recurrent nervure is greater than the space between the first and second recurrent nervures on the cubital nervure. Legs black, finely punctured, the tibial spurs and the tarsi ferruginous; posterior femora within glabrous. Abdomen orange, the apical margins of the segments subopaque, beneath it is marked with dark blotches; pygidium with a few scattered punctures, towards the apex with sparse, bright hairs. Length 14—15 mm.

Two specimens; Montana.

**Larra punctifrons** n. sp.

♀.—Black, slightly shining; sides of the face and thorax with sparse, silvery-sericeous pile. Head and thorax with fine, even punctures, more fine on the cheeks and pleuræ; clypeus strongly convex, the posterior half finely punctured and subopaque, the anterior half polished, and with large scattered punctures, a transverse furrow before the anterior margin, the latter being polished and entire; front bituberculate above the antennæ; a distinct impressed line begins immediately behind the tubercles and extends to the lower ocellus, beginning again behind this ocellus, it passes up through a strong swelling between the posterior ocelli to the base of the occiput, behind the posterior ocelli there is a strong foveæ; eyes strongly converging towards the top, the distance between them at this point is equal to the length of the scape and second antennal joints united; antennæ shorter than head and thorax together, tapering to the apex, the third joint shorter than the fourth, which is slightly longer than the fifth joint; scape much narrowed to the base, punctate beneath; dorsulum with a longitudinal depression on each side near the tegulæ, the latter as well as the apical portion of the tarsi, rufo-testaceous; metathorax above very finely granulated or shagreened, with a slight, polished, longitudinal line medially; tibiæ and tarsi strongly spinose, the inner side of posterior pair clothed with dense, sericeous pile. Wings with a slight yellowish tinge, nervures brownish, the distance between the first recurrent and the first transverse-cubital nervure is distinctly less than the breadth of the second submarginal cell at the top, and is about equal to the space between the first and second recurrent nervures on the cubital nervure. Abdomen smooth, the apical margins of the segments obscurely rufo-testaceous, the first three segments with a silvery, apical band; pygidium shining, convex, with sparse, large punctures; beneath, the abdomen has a few stiff hairs. Length 12 mm.

This species has a wide range, as I have one from Camden County, N. J., taken Sept. 12, 1891, and two others from Montana. Resembles *L. pennsylvanica*, but the metathorax is not striated as in that species. I think, however, it is more closely related to *L. acuta* Patton.

**Trypoxylon ornatipes** Mihi.

*T. ornatipes* Fox, Trans. Amer. Ent. Soc. vol. xviii, p. 148, 1891.

The original description of this species was drawn up from a very dirty specimen, and as I have since received a fresh example from Mr. C. W. Johnson, collected in the vicinity of Philadelphia, I am able to detect several characters not mentioned in the first description, viz.: beginning on the apical portion of the sixth joint the antennæ are distinctly thickened, this is also the case with joints 10–12, these joints being stouter than joints 6–9, the second antennal joint is larger than the third, the latter being a little more than half as long as the fourth joint; the space between eyes at the top is broader than the length of the three first antennal joints united. All the legs in this specimen are yellowish. In line 10 of the previous description for mesonotum read metanotum.

**Stizella duplicata** Prov.

*S. duplicata* Prov., Add. Hym. Queb. p. 414, ♀♂. Nov., 1888.

*S. scolopacea* Hdl., Sitz. k. Akad. Wiss. Wien. xcviii, p. 510, ♀♂. '89.

I can see no reason why *duplicata* and *scolopacea* should be separated. I have specimens which agree with the descriptions of both authors, and with the figure of *scolopacea* given by Cameron (Biol. Cent. Amer. Hym. ii, pl. 6, fig. 11). As Handlirsch makes no mention of *duplicata* in his monograph, it is evident that he either did not see the description at all, or that he received it too late to have it included in his work.

**Miscophus americanus** Mihi.

Since describing this species, which was founded on a single specimen, I have taken ten additional specimens, among which were, fortunately, several males. These latter are slightly smaller than the females, and differ otherwise as follows: the posterior face of the metathorax with irregular, strong, transverse striations, with a strong medial sulcus, which begins from a strong foveæ; the marginal cell is subangular beneath. Length 3–3.5 mm.

**Gorytes microcephalus** Handl.

Described originally from Georgia. I have two specimens from Camden County, N. J., June 28, 1891. This will probably prove to be the male of *G. nebulosus* Pack.

**Gorytes floridanus.**

*Hoplisus foveolatus* Fox (nec. Handl.), Entom. News, vol. i, 1890.

I propose the name *floridanus* for this species, as *Hoplisus* and *Gorytes* have been merged into one, and there being a *Gorytes foveolatus* described in 1888.

**Agenia calliptera** Say.

This species described as *Pompilus*, belongs to *Agenia*. I have two specimens from Philadelphia and Camden County, N. J., June 28, 1891, respectively, which agree with Say's description. Mr. Cresson, in his "Notes on the Pompilidæ," doubtfully referred this species to *Agenia*, but as he did not see any specimens this note verifies it.

(To be continued.)

———o———

## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA.

The next family to be considered is the Papilionidæ. It consists mostly of quite large species which are found all over the world, and they may be known by the front legs of both sexes being perfect and always used in locomotion. Quite a number are provided with a lanceolate appendage upon the fore tibiæ, but this also occurs in the Hesperidæ. The caterpillars are naked, and the chrysalis is attached by the tail and has a loose girth around the middle and the head points upward. The family is divided into the Papilioninæ and the Pierinæ, and they may be separated as follows: In the Pierinæ the antennæ are straight, median nervure of fore wings with three branches, hind wings partially enclosing abdomen, fore tibiæ with no epiphysis, claws bifid. The Papilioninæ have the antennæ more or less arcuate, median nervure of fore wings with four branches, hind wings not enclosing the abdomen, fore tibiæ with a distinct epiphysis on the inner side, claws simple and long. The last family, the Hesperidæ, are generally small butterflies, and sombre in appearance. The body is robust, and the head broad, the antennæ are widely separated at the base and curved or crooked at the tip; their flight is peculiar, and they are often called "skippers" on account of its jerky character. When at rest the front pair of wings are more elevated than the hind pair, and this gives them an odd and characteristic appearance. The character of the antennæ, their peculiar flight and the drooping of the inferior wings enable this family to be readily recognized. The Hesperidæ are well represented in this country, but their true home seems to be tropical America, where the species are very numerous.—ED.

## A Tachinid Parasite of Chrysophanus dione. Exorista chrysophani n. sp.

By C. H. TYLER TOWNSEND, Las Cruces, N. Mex.

The following is a description of a *Tachinid* received from Mr. Chas. W. Johnson, of Philadelphia, and which bears the label: "From chrysalis of *Chrysophanus dione* June 9, Iowa."

*Generic characters.*—Eyes thickly hairy; front and face of ♀ about one-third width of head, which is a little wider than the thorax and abdomen; frontal bristles extending a little below base of antennæ; two orbital bristles in ♀. Antennæ about as long as face; second joint hardly elongate, third joint two or three times as long as second; arista thickened half its length, microscopically pubescent, distinctly 3-jointed, the second joint quite strongly elongated; front hardly prominent, face receding; sides of face bare, rather narrow, facial depression much widened below; facial ridges bare, except a few weak bristles above vibrissæ, the latter inserted well above the oral margin; cheeks narrow, hairy on lower portions. Proboscis withdrawn, short, fleshy, labella well developed; palpi very distinct, considerably thickened at tip. Abdomen not wide, short, oval or elliptical, first joint hardly shortened; macrochætæ only marginal, except on anal segment. Legs not long; metatarsi nearly as long as following joints; hind tibiæ with fringe of bristles on outer edge. Wings longer than abdomen, not wide, without costal spine; apical cell narrowly open, ending well before tip of wing; fourth vein bent at an obtuse angle, without stump or wrinkle; hind cross-vein nearer to bow of fourth vein.

**Exorista chrysophani** nov. sp. ♀.—Black, silvery. Eyes brown; front, face and cheeks silvery, the front shading to brassy or golden; frontal vitta about one-fourth width of front, black or dark brown, fringed behind; antennæ and arista wholly black, second antennal joint bristly; cheeks cinereous and hairy on lower portions, with some bristles on lower border; proboscis and palpi black, or brown; occiput cinereous, gray hairy, with broad black band from vertex to center, fringed with black hairs on orbital margins. Thorax cinereous, or silvery pollinose, hairy and bristly, with three narrow, well defined, median black vittæ, and a heavier interrupted one outside them; scutellum ochreous, blackish at base, with an apical decussate pair of macrochætæ and three lateral pairs. Abdomen covered with short black bristles; first segment entirely black, without macrochætæ; second and third segments shining black, broadly silvery at base with a brassy tinge; second segment with a median marginal pair of macrochætæ and a lateral one; third segment with a marginal row, six or eight of which are on upper surface; anal segment shining jet black, very narrowly silvery at base, armed with macrochætæ and bristly hairs. Legs black, femora slightly silvery, femora and tibiæ bristly; claws and pulvilli short. Wings grayish hyaline, third vein spined at base; hind cross-vein sinuate; tegulæ tawny white, borders darker; halteres fuscous. Length 5.5 mm.; of wing 4.5 mm.

Described from one specimen; Iowa.

Mr. Johnson writes: "Two specimens were given to me by Dr. Skinner. They are from Iowa, and came out of the chrysalis of *Chrysophanus dione*, the larvæ having been sent to Dr. Skinner by Mr. Henry G. Willard. I infer, therefore, that they were accidentally bred by Dr. Skinner. I had at first thought it necessary to describe this form as a new genus, but subsequent reflection has induced me to locate it in *Exorista*, from which it differs appreciably only in the elongate second aristal joint, and the vibrissæ being inserted at a short distance above the oral margin. Besides, Messrs. Brauer and von Bergenstamm have erected several new genera which are founded on practically the same characters."

———o———

# A NEW GENUS AND SPECIES OF ODONATA FROM JAMAICA.

By PHILIP P. CALVERT.

**ORTHOLESTES** n. gen.

Wings ceasing to be petioled just before the first postcostal cross-vein. Median sector arising from the principal at less than one-third the distance from the arculus to the nodus, the subnodal one cell after the median. Quadrilateral distinctly trapezoidal, superior side longer than one-half the inferior, internal side one-third to one-fourth the inferior. Ultra-nodal sector unbroken, or but very slightly angulated; subnodal and short sectors hardly more angulated. Nodal sector arising from two-and-a-half to four cells after the nodus. No supplementary sectors between the median and short sectors. With supplementary sectors, forming an irregular network (7–16 marginal cells), between the subnodal and median sectors. Pterostigma three times as long as broad. Hairs of the feet long.

**O. clara** n. sp.—Abdomen ♂ 38 mm., ♀ 29–31. Hind wing ♂ 29, ♀ 25–27. Yellow and dark brown or black. Labrum, epistoma and frons, dark metallic blue. Abdomen dark brown, 3-7 with a yellow basal ring; 17–23 postcubitals.

♂.—Superior appendages forcipated, dilated to form two rounded, inferior ante-apical teeth. Inferior appendages half as long.

♀.—Appendages longer than the last segment. Dorsal apical half of 9 bright yellow.

Described from one ♂, one ♀ from Kingston, Jamaica, May, 1890, by Mr. E. M. Aaron, to whose kindness I am indebted for them; one ♂, Kingston, by Mr. Wm. J. Fox, (Amer. Ent. Soc. coll.); one ♀, Jamaica, Mr. Charles W. Johnson (Wagn. Ins. coll.).

This interesting form belongs to the Legion *Lestes* Selys. A detailed description will appear later.

# A CONJECTURE.

By CHARLES C. CRESSON, Germantown, Phila., Pa.

In reading of the immense congregations of Butterflies, that sometimes have been observed in the Fall of the year, it is an interesting subject for reflection as to *the Divine intention* in endowing them with the instinct of collecting together, and the purpose intended to be carried out. This habit of immense congregations is not confined to Butterflies, but is to be observed in an unknown number of other animals. Our American Buffalo, or Bison, collect in very large herds at a certain season of the year, as Catlin relates, for the purpose of continuing the species; and when so collected, the bulls forthwith commence to struggle and fight with each other, the stronger conquer the weaker ones, and then choose such mates as please them. The large congregation then separates into little family groups, each with its own masculine head, and so enters on to the business of multiplication and addition, and then remains in peace and quiet until the next annual return of the season for reassembling—A clear and manifest instance of the "Survival of the Fittest," the most powerful bulls continuing the species, and many of the weak ones being killed or disabled. The Wolves congregate in packs for mutual assistance, then prowl around these herds and families, hunting for something to devour; and when they find a stray Buffalo, too much alone for its own good, they attack him, her, or it (the calf), as the case may be, and breakfast, or dine, on their prey (as described by Catlin).

The Norwegian Lemming, as described in the "Encyclopedia Brittanica" and elsewhere, occasionally migrate in great numbers, pursuing their course in a straight line, regardless of every obstacle, and consuming everything eatable in their way (Baird). Their usual course is from the East to the West; they swim over rivers and lakes until they arrive at the Atlantic Ocean; then they continue to follow their leaders, plunge together into the ocean and swim out to sea; they never swim back again, but all are drowned in the mighty waters. On their journey from their home to the ocean (which lasts sometimes for over a year) they procreate and largely increase the congregation. The young and old keep straight on, and all perish in the company of each other.

At the home they have left, remains a sufficient number to get up another exodus in due season ("Encyc. Brittanica" condensed).

We thus see that the Buffaloes congregate for procreation; the Wolves for mutual assistance in hunting, and the Lemmings to search for food, when the supply at home is insufficient for their support.

Zoölogy, as a part of animal history, gives us accounts of similar congregations and migrations of other animals, congregating and migrating together, for different reasons. Swallows, Cranes, Blackbirds, Reedbirds and Pigeons, going North or South, according to the season, to avoid the cold. Wild Ducks and Geese going North to procreate, in seclusion, where their great enemy, man, is at a distance, and where their food is in abundance.*

Some kinds of caterpillars, in their migrations, in passing over our railroads in the far West, have so anointed the rails with their carcasses, crushed by the passing wheels, as to impede the progress of the trains. The great herds of Buffaloes, at the times of their congregations, have sometimes also seriously impeded the progress of the railroad trains. This may have been one reason for destroying and exterminating the Buffaloes. Another reason appears to have been the desire to weaken the Indians by destroying their food. The profit accruing from their hides and horns was, no doubt, another reason. These three principal interests being in conjunction, the Buffaloes had to go.

Now, in view of the above facts, or supposed facts, it becomes an interesting Conjecture as to what is the Divine intention in endowing animals with such destructive instincts. The Human animals in their instinctive struggles as to procreation, food, homes and other worldly possessions, proceed to congregate into armies, with their weapons of war, and so proceed, with all conceivable craft and force, to thin out the human crop on the earth, in their struggles with each other (just as do the Buffaloes), and thus obtain elbow room for the survivors. In the "Survival of the Fittest," history tells us that the *fittest* is the party best qualified to kill (not to cure) and to destroy (not to build up); and so civilization suffers.

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* In the park of Schloss Ruhleben, according to a local correspondent of a Berlin journal, a Stork set up his house some years ago, and regularly every Spring has returned to his nest, along with his "wife." There was a doubt expressed last year whether it was the same bird who returned year after year. In order to prove the matter, a steel ring was fastened around the left leg of the male Stork, and the name of his European residence engraved upon the ring. When the Stork again appeared this present Spring, he had a ring on each leg. His human friends in his Eastern home had fastened a silver ring to his right leg, and on it was engraved the inscription, "India sends her greeting to Germany." —*Christian Intelligencer.*

Now, to speak on the subject of *the Conjecture*. Of the Butterflies that congregate on the coast, some are probably blown from thence out to sea to become food for fishes; some remaining on the land become the food of birds, or are otherwise destroyed, and so leave few or none as successors to continue the species. It may be the Divine intention thus to reduce the superabundant number of Butterflies so that the food, provided in the ordinary course of nature, will be sufficient for those left behind. If the proper food were scanty or absent in the localities where the great swarms of Butterflies deposited their eggs, the young products of the eggs would not be able to carry on their usual changes, and would die of starvation. And so the continuity of the species be discontinued so far as they would be concerned, as a result of a superabundance of larvæ, to the supply of food.

As to the sea-going instinct of the Lemmings, it appears as if no other account or purpose can be thought of, except that *it is an instinct intended to reduce their superabundant numbers*. And as to the Divine intention in *drowning* them, it appears as if drowning were Divinely considered to be the very easiest and surest form of death. In this connection we may very properly turn to the Holy Scriptures in our researches on this matter. They may be, by some, disregarded as an authority in scientific matters, but with others (including the writer) they are the highest authority, so far as they speak, on any subject they speak of.

In the Scriptures we find the following historical records in Exodus, chapter x, verses 12–21:

"And the Lord said unto Moses, Stretch out thine hand over
"the land of Egypt for the locusts, that they may come up upon
"the land of Egypt, and eat every herb of the land, even all that
"the hail hath left. And Moses stretched forth his rod over the
"land of Egypt, and the Lord brought an east wind upon the
"land all that day, and all that night; and when it was morning,
"the east wind brought the locusts. And the locusts went up
"over all the land of Egypt, and rested in all the coasts of Egypt:
"very grievous were they; before them there were no such locusts
"as they, neither after them shall be such. For they covered

"the face of the whole earth, so that the land was darkened; and "they did eat every herb of the land, and all the fruit of the trees "which the hail had left: and there remained not any green thing "in the trees, or in the herbs of the field, through all the land of "Egypt. Then Pharaoh called for Moses and Aaron in haste; "and he said, I have sinned against the Lord your God, and "against you. Now therefore forgive, I pray thee, my sin only "this once, and intreat the Lord your God, that he may take "away from me this death only. And he went out from Pharaoh, "and intreated the Lord. And the Lord turned a mighty strong "west wind, which took away the locusts, and cast them into the "Red Sea; there remained NOT ONE locust in all the coasts of "Egypt. But the Lord hardened Pharaoh's heart, so that he "would not let the children of Israel go."

Here it is evident that it was the deliberate intention of the Divine Being to destroy the Locusts by drowning them in the Red Sea.

How the Divine Being thought best to proceed when desiring to cleanse the Earth, and why He did it, is shown clearly and unmistakably in Genesis, chapters vi and vii.

Chapter vi, vs. 5–18: "And God saw that the wickedness of "man was great in the earth, and that every imagination of the "thoughts of his heart was only evil continually. And it repented "the Lord that he had made man on the earth, and it grieved "him at his heart. And the Lord said, I will destroy man whom "I have created from the face of the earth; both man, and beast, "and the creeping thing, and the fowls of the air; for it repenteth "me that I have made them. But Noah found grace in the eyes "of the Lord These are the generations of Noah: Noah was "a just man and perfect in his generations, and Noah walked "with God. And Noah begat three sons, Shem, Ham, and "Japheth. The earth also was corrupt before God, and the earth "was filled with violence. And God looked upon the earth, and, "behold, it was corrupt; for all flesh had corrupted his way upon "the earth. And God said unto Noah, The end of all flesh is "come before me; for the earth is filled with violence through "them; and behold, I will destroy them with the earth. Make "thee an ark of gopher wood;" (etc. vs. 14–16). "And, behold, "I, even I, do bring a flood of waters upon the earth, *to destroy* "*all flesh*, wherein is the breath of life, from under heaven; and "everything that is in the earth shall die. But with thee will I "establish my covenant; and thou shalt come into the ark, thou, "and thy sons" (etc. vs. 18–22).

Chapter vii (vs. 1–20, a specific account of the Flood), vs. 21–24: "And *all flesh died* that moved upon the earth, both of fowl, "and of cattle, and of beast, and of every creeping thing that "creepeth upon the earth, and *every man:* all in whose nostrils "was the breath of life, of all that was in the dry land, died. And "*every living* substance was destroyed which was upon the face "of the ground, both man, and cattle, and the creeping things, "and the fowl of the heaven; and they were destroyed from the "earth: and *Noah only remained alive*, and *they that were with "him in the ark.* And the waters prevailed upon the earth an "hundred and fifty days."

We see by these recorded cases that the Divine Being deliberately drowned the Human race in the Flood, and drowned the Locusts in the Red Sea, *just to get rid of them.* It was His way; simple in design and execution, and perfectly effectual. There was *not one* man *left*, except Noah and his family; and *not one* locust. It is probably impossible for any man to show, in more distinct words and language, the unmistakable and deliberate determination of the Divine Being to destroy the whole Human race on the earth, except Noah, who was spared for the reasons given in Genesis vi, 9–10. He destroyed all life "which was upon the face of the ground" (vii, 23), probably all life, animal and vegetable, excepting fresh water fishes, and those forms of vegetable life having their proper habitat in fresh water. His reasons for so doing, are also just as clearly and definitely given and recorded, as if done to justify Himself to His creature, man, in His course of action, as related in the history of the Flood.

To those who do not believe in God, nor in the Bible, nor the Flood, nor any other miracle, it might be a subject of interesting contemplation to consider the extraordinary action of the Norwegian Lemmings. It appears to me to be unaccountable on agnostic principles, so far as I understand them. There is here no "Survival of the Fittest" to hand down this sea-going suicidal propensity (or impulse, or instinct, or habit, or any other name that may be given to it) from generation to generation; all are destroyed, *not one* survives. There appears to be a kind of culmination of circumstances leading to the fatal termination of their travels. These little creatures, apparently unconscious of their approaching disaster, go merrily on, crossing the waters of rivers and lakes, one after another, successfully and safely; and thus encouraged by their success and safety, plunge into the ocean, probably expecting successfully and safely to reach the other shore. But modern science has no account to give us of their arrival in Canada or these United States. *Not one* of them has successfully arrived on our side of the Atlantic in modern times.*

In conclusion, I look upon it as impossible to establish my foregoing Conjecture as a general Fact, by means of specific facts observed or recorded, and by reasonings thereon, viz.: that the Divine Being, desiring to dispose of, or get rid of superabundant animal life by means of drowning, endowed the Lemmings with *instincts, deliberately intended, for the specific purpose of thinning them out* in that way. The immense congregations of Butterflies may, in some way, have the same intention of thinning out their superabundant numbers. I may say, however, that such a conjecture appears to me to be probable, yet also, that it is *only conjecture*, and must always remain to be such to the end of time.

There is no end to conjecture; too much of it is not profitable and is unsatisfying. Its real use is to stimulate research, and observation, and reflection. Conjectures are boundless in their nature, and can only be established as facts, or errors, by patient and intelligent research.

The writer would be glad to have the opinions of any readers of ENTOMOLOGICAL NEWS on this subject, with any facts that have influenced their conclusions; not as matters of disputation or contention, but for the true advancement of science, and to increase our knowledge of Nature.

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* The presence of Lemmings in the northern part of North America, of species different from those now in Norway, seems to indicate that in remote ages, such a condition of things existed as to climate, as enabled the Lemmings to pass westward from Norway to America. It is believed by some scientists that, in the remote past, Greenland and other north polar regions had a climate different from its present glacial character. Later researches have discovered fossil remains of trees, etc., with forms now belonging to the temperate and tropical zones of the earth. It may be that the species of Lemmings, now in North America, are descendents of those who passed from one continent to the other in those remote times when the differences of climate made such a passage possible to them.

A recent importation of orange trees into California from Tahiti showed them to be infested by a new insect, and the authorities will not allow them to be landed.—(*Newspaper Entomology.*)

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of Entomological News solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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**In the future all papers received for publication in the News will be printed according to date of reception.**

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**NOTICE.**—Those who wish to continue their subscriptions to **Entomological News** for the coming year, will please indicate their desire to the Treasurer (see second page of cover) **before** January 1st, next. The price will be the same—**One Dollar.** We hope to make volume 3 even better than 2, and trust that our readers will do what they can to help up do so.—Ed.

**Homohadena infixa** (Walker).—The genus *Homohadena*, distinguished from the Hadenæ (*Hadena*, *Luperina* and *Hylophasia*) by having no abdominal tufts, revised by Prof. J. B. Smith (Proc. U. S. Nat. Mus. vol. xiii, pp. 397–405) in 1891, and having for its type *H. badistriga* Grote, affords an unrecorded synonymy. *Hadena infixa* Walk. and *H. incomitata* Harvey were described from rubbed specimens, hence their identity with *badistriga* was not recognized. The species occurs at Hartford, Conn., and throughout the region east of the Great Plains.

**Homohadena infixa** (Walk.)
*Hadena infixa* Walker.
*Homohadena incomitata* Harvey.
*Homohadena badistriga* Grote (unrubbed variety).

Wm. Hampton Patton, Hartford, Conn.

While collecting near Knoxville, Tenn., on the 4th of last July, and also later during the same month I took winged specimens (both ♂ and ♀) of *Stephania picta*. Previous to this but a single winged specimen (a ♀) of this Hemipter has been recorded (by Uhler, in "Standard Natural History"). In addition to the full-winged form, there occurred in still greater numbers a short-winged form; the thorax of this had same structure as full-winged form (see "Standard Nat. Hist."). I shall be glad to correspond with hemipterologists concerning this and other rarities, and regarding exchanges.

H. E. Summers, 71 N. Water St., Rochester, N. Y.

Cause of Peach Yellows.—What renders the peach-tree susceptible to the bacterium present in the disease known as the "yellows" is probably the mite (*Bryobia pratensis* Garman; for description see "Insect Life," vol. iii, No. 2, fig. 4, September, 1890, p. 47) which attacks the tree in countless numbers, thus lessening its vitality and causing the foliage to change color. This mite I found to be very plenty in Connecticut in 1883.

Its orange-colored eggs cover the bark in Winter, especially about the buds, ready to hatch with the opening of the leaves in Spring. Grafts of these buds would thus inoculate other trees. The Yellows Mite would be an appropriate name.—WM. HAMPTON PATTON, Hartford, Conn.

*Amphion nessus* appeared long in advance of the blossoming of Blue Flag—*Iris versicolor;* this year at least. During a very hot, Summer-like spell of weather late in April, one of my friends, who missed me leaving for the suburbs on a Sunday's collecting tour, saw two specimens of *A. nessus* feeding on the flowers of the lovely Mountain Pink—*Silene pennsylvanica*, which covers the rocky ledges of the open forest. This Wild Pink usually blossoms in this vicinity from the last week of April until the middle of May. My friend being provided with only a cyanide bottle for mothing, could not take any of the specimens seen on that day. From the last week of May until after the middle of following month I watched in vain for the appearance of this Sphingid on the flowers of Blue Flag.—RICHARD E. KUNZE, M.D.

WHILE summering in the Nutmeg State this year a friend of mine found insects very plentiful; some kinds rather too plentiful, in fact. He used to sit up nights and catch them. Some of them came in at the window, and some didn't. Thereby hangs a tale. At first he was mad, then grew sad, and finally glad; his heart was filled with ghoulish glee—he caught every blessed one he could find and preserved the reeking carcasses as ghastly trophies of his sojourn in the land. They were of all sizes, ages and complexions, from the pallid infant to the ruddy sire and gory grandsire, and he smiled with joy (?) at the goodly array. This experience led to the preparation of the following placard, which, with its accompanying specimen (a fine, plump one), was posted, at his departure, on the wall of the room he had occupied, and there left for the edification of the landlady. It is to be hoped that her feelings were not so severely injured as to disable her from improving matters for the next comer.

Locality, ———, Conn.
Date, Aug. —, 1891.
Number of specimens, 39.

*Classification.*—Type, Arthropoda.
Class, Insecta.
Order, Hemiptera.
Suborder, Heteroptera.
Family, Acanthiidæ.
Genus, *Acanthia*.
Species, *lectularia*.
Scientific name, *Acanthia lectularia*.
Common name, BEDBUG.

*Habits.*—This degraded bug inhabits (too many of) the sleeping apartments of the human species. Secreting itself by day, it sallies forth at night to feast upon the blood of the unwary traveler and luckless lodger.

Its appetite is always keen, and although it has been known to live a year without food, it prefers to take nourishment oftener, a proceeding which usually provokes the following, or similar

*Remarks:* Ow! Ugh! Whew! . . . . By Jove! . . . . Great Scott! . . . . Gosh darn it all! . . . .

A true history of the above specimen.—X. Y. Z.

NEW FOOD-PLANTS of *Parasa chloris*.—While searching for larvæ of *S. astylus* on Huckleberry bushes in Bergen County, N. J., I found, Sept. 20, 1891, two larvæ of *P. chloris* on one leaf of the Swamp Blueberry—*Vaccinium corymbosum*. Another I took from the downy, or different-leaved Poplar—*Populus heterophyllus*, young plants of which grew near the same swamp. These are not mentioned in Mr. Wm. Beutenmüller's "Catalogue of Lepidoptera, etc., with their Food-plants." Another larva of *Parasa chloris* fed on Wild Cherry. Still another of the same genus, if not species, I found on Black Willow—*Salix nigra*. The latter larva had orange stripes and fleshy tubercles in the place of the usual red markings. It was parasitized and subsequently died. Strangest of all was the behavior of these larvæ in the breeding-cage, in which I also had some of *Limacodes scapha* feeding on Bayberry—*Myrica cerifera*, and another to me, unknown larva, on White Birch. In turn, *P. chloris* would feed on the plants they were found on, and again they remained for days on the other plants of the breeding-cage, feeding and thriving thereon. One has now been feeding eleven days, two pupated on the underside of leaves and two died of parasites. Was it not strange that they should go alternately on Downy Poplar, Wild Cherry, Bayberry, White Birch, Black Willow and Swamp Willow? I had them in a large glass-jar on my office desk, where I watched them by day and night. Downy Poplar is likewise known as Eastern Cottonwood.—RICHARD E. KUNZE, M.D.

THERE ARE EXCEPTIONS.—"A beetle cannot fly with its elytra removed." F. H. Wenham, Aerial Locomotion, Smithsonian Report 1889, p. 318. A few days ago along a sunny river-bank I found *Cicindela hirticollis* abundant. Examples were taken and the elytra removed; every one flew away instantly, on being released, with a speed that defied the eye to follow.

"Insects are killed quickly by putting them into a bottle containing lumps of cyanide of potassium covered by plaster of Paris." So everybody says. To this I note three exceptional cases. One June day I happened to be collecting where many species of Phalænidæ were abundant. Examples of several species taken were all killed quickly in my cyanide bottle except one, that of *Corycia vestaliata* (sex not noted). To my surprise it was found some time after its imprisonment alive and struggling to escape. To test the matter other moths were put into the bottle, all of which were quickly overcome, but *C. vestaliata* still lingered, having withstood the fumes more than an hour.

The second instance is similar; the species was *Caberodes confusaria*. It was active more than thirty minutes by the watch, and, to make it sure, the prisoner was resisting death, contrary to all reason, crickets, grasshoppers, wasps, moths and butterflies introduced to the same space, all responded as they should. The third case occurred a few weeks since the same species as the preceding with similar behavior.

Have others observed similar behavior by any insect? What explanation occurs to any one?—D. S. KELLICOTT.

*Danais archippus.*—Sunday, September 6th, present year, I went after Catocala. It was a showery day and did not go beyond our suburbs. Only one specimen was seen in a fine grove, but not taken. While examining trees, a boy, who stood watching me, called my attention to a *Danaid* circling overhead in a near-by place. Presently it flew and settled on the twig of a dead branch on one of the lowermost limbs of an *Acer rubra.* I told the boy to watch it for me, which he did, and inform me of its movements. A thunderstorm could be heard at a distance. It was about 1 P.M., and on its approach the *Danaid* took refuge in the foliage of a Liquidambar. That maple had only a very few scattered *red* leaves among its foliage, and the insect hung on that branch exactly half an hour until aroused by thunder.—RICHARD E. KUNZE, M.D.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

Insects have been named for F. L. Harvey, H. C. Denslow, J. H. Bomberger, C. P. Gillette.

## Entomological Literature.

THE TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, pt. 3, 1891.—On a new species of *Prothœ*, by Philip Crowley (illustrated). Notes on the Orthopterous family Mecopodidæ, by W. F. Kirby. Note on *Siphonophora artocarpi* Westw., by J. O. Westwood. On the South American species of *Diabrotica*, pt. 2, by Chas. J. Gahan.

BIOLOGIA CENTRALI-AMERICANA: pt. 94, July, 1891.—Coleoptera: vol. ii, pt. 1, by D. Sharp, pl. 11; vol. iv, pt. 2, by G. C. Champion, pp. 257–314, pl. 11; vol. vi, pt. 1, suppl., by M. Jacoby, pp. 265–272. Lepidoptera-Heterocera, by H. Druce, vol. i, pls. 28, 29; vol. ii, pp. 1–5, pt. 95, September, 1891. Coleoptera: vol. ii, pt. 1, by D. Sharp, pp. 385–432; vol. iv, pt. 2, by G. C. Champion, pls. 12, 13; vol. vi, pt. 1, suppl., by M. Jacoby, pl. 41. Lepidoptera-Heterocera, by H. Druce, vol. i, pls. 40, 41.

Journal of the Bombay Natural History Society vol. vi, No. 2.—The Butterflies of the Central Provinces, pt. 4, by J. A. B. Agricultural Entomology, by E. C. Coates. The Locust of North-western India (*Acridium peregrinum*) with plate, by E. C. Coates.

Transactions of the American Entomological Society, vol. xviii, Nos. 2 and 3.—Notes on some Noctuidæ, with Descriptions of New Genera and Species, by John B. Smith. On the Species of Trypoxylon Inhabiting America North of Mexico, by Wm. J. Fox. A Revision of the Species of *Euclea*, *Parasa* and *Packardia*, with Notes on *Adoneta*, *Monoleuca* and *Varina ornata* Neum., by H. G. Dyar. Revision of the Donaciæ of Boreal America, by C. W. Leng. Revision of the Genera and Species of Anthonomini Inhabiting North America, by W. G. Dietz, M.D.

Lepidoptera Indica, by F. Moore, F. Z. S , pt. 7.—This contains descriptions of the remainder of the Euplœinæ and the beginning of the Satyrinæ, with seven colored plates and about forty figures.

West American Scientist, September, 1891.—New Bombylidæ of the group Paracosmus, by D. W. Coquillett. *Amphicosmus* nov. gen. *A. elegans* n. sp. *Metacosmus* nov. gen.; *M. exilis* n sp. *Paracosmus insolens* n. sp. October, 1891, Revision of the Bombylid Genus *Aphœbantus*. An interesting and useful table for the determination of the species is given and the following new species in the genus described: *A. varius*, *A. tardus*, *A. marcidus*, *A. mixtus*, *A. interruptus*, *A. scriptus*, *A. desertus*, *A. capax*, *A. abnormis*, *A. fumidus*, *A. brevistylus*.

Revue Biologique du Nord de la France, 4e Annee, No. 1, October, 1891.—The Hymenopterocecids of the Willow, by Dr. H. Fockeu.

Studi della Regia Stazione di Entomologia Agraria di Firenze, 1891.—April, 15, New Insecticide Emulsions, by A. Targioni-Tozzetti and Dr. G. del Guercio. June 28, Experiments undertaken to determine the endurance of young vegetables against the action of various mixed insecticides, id. July 16, On the resistance to insecticides by the tender shoots and fruits of the Appie, Pear, Plum, Peach, Lemon and Celastrus in the struggle against noxious Lepidoptera and Aphids, id.

L'Auxiliare de l'Apiculteur, September, 1891, Amiens.—General ideas on the nature and physiology of the Bee, by Abbe Ulivi. Some parasites on the front of the head of bees, by A. Teynac.

Anales de la Sociedad Cientifica Argentina, xxxii, 3, September, 1891.—Dipterologia Argentina (Syrphidæ), continued,* by F. L. Arribalzaga.

Animali ed Insetti del Tabacco in Erba e del Tabacco Secco di Ad. Targioni-Tozzetti, Direttore della R. Stanzione di Entomologia Agraria di Firenze. Firenze, Roma, 1891. Pp. lxiv, 347, 100 text figures, 3 lithographic plates.

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* Contains new species other than North American.

ANNALI DEL MUSEO CIVICO DI STORIA NATURALE DI GENOVA, Serie 2, vii, 1889–90.—Expedition to Assab on the Red Sea of G. Doria and O. Beccari in the "Esploratore" from Nov. 16, 1879, to February 26th;* iv. Coleoptera, by R. Gestro. Expedition of Leonardo Fea in Burmah and the neighboring region; xv. First studies on *Cicindela*,* by R. Gestro; xvi. On some Carabidæ,*† by H. W. Bates; xvii. List of the Phytophagous Coleoptera,*† by M. Jacoby; xx. Formicidæ, by C. Emery, 2 plates; xxi. Arachnida Arthrogastri, by T. Thorell, 1 pl.; xxii. Aradidæ, by E. Bergroth, 1 plate. On some Cetonids collected by Dr. Elio Modigliani on the west coast of Sumatra,* by R. Gestro. Description of new species of Histeridæ,* by J. Schmidt. Enumeration of the Haliplidæ, Dytiscidæ and Gyrinidæ, collected by Prof. L. Balzan in South America,* by M. Regimbart. New or little-known Lycidæ from the Museo Civico di Genova,* second memoir, first part, by J. Bourgeois. List of the Phytophagous Coleoptera collected by Signor Modigliani at Nias and Sumatra, with descriptions of the new species,*† by M. Jacoby. Three new Silphidæ from Italy,* by E. Reitter. On some Italian cave-dwelling Myriapoda collected by Sig. A. Vacca and R. Barberi,* by R. Latzel. On some Formicidæ of the Palaearctic fauna,* by C. Emery. Odonata of Sumatra, comprising the species collected at Pulo Nias by Dr. E. Modigliani,*† by E. de Selys-Longchamps—viii. 1889–90, Studies on Malaysian and Papuan Spiders: Part iv. Spiders of Indo-Malaysia collected by O. Beccari, G. Doria, H. Forbes, J. G. H. Kinberg and others,*† by T. Thorell.—ix. 1889–90, Res Ligusticæ; xi. Contributions to our knowledge of the Chilopoda of Liguria,* by R. I. Pocock. Three new species of *Zephronia* from the Oriental region,* id. Descriptions of two new species of Malachiidæ,* by E. Abeille de Perrin. Expedition of Leonardo Fea in Burmah and the surrounding region: xxiii. Nitidulidæ,* by A. Grouvelle. .Description of a new species of Cucujid belonging to the Museo Civico di Genova,* id. Revision of the Pseudoscorpions of the basins of the Parana and Paraguay Rivers in South America, by L. Balzan;*† 5 plates. Hymenoptera of Syria collected by Augusto Medana, Italian Consul at Tripoli in Syria, with descriptions of some new species,* by P. Magretti.

REVUE SCIENTIFIQUE DU BOURBONNAIS, etc., iv, 10, October, 1891.—The fossil insects of Commentry, by E. Olivier; 1 plate.

LE NATURALISTE (Paris), Oct. 15, 1891.—Descriptions of new Lepidoptera,* by P. Dognin. Description of the caterpillar of *Spilodes verticalis* L., by P. Chretien.

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xvii, 20, October, 1891.—Eight new Aeschnidæ, by Dr. F. Karsch; *Aeschna furcifera*, Mexico, n. sp. *Holomelia mirabilis*, a curiosity among Coleoptera,*† by E. Brenske. The Erichsonian coleopterous genera *Monotropus* and *Lasiopsis*, id. The genus *Perissoneura*, by R. MacLachlan.

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* Contains new species other than North American. † Contains new genera.

**Biologisches Centralblatt** (Erlangen), Oct. 15, 1891.—On S. Exner's physiology of the facetted eyes in crabs and insects, by Herr Zacke.

**Tijdschrift voor Entomologie** (The Hague), xxxiii, 3, 4, 1890.—Catalogue of the Araneæ found in Holland, second supplement, by A. W. M. Van Hasselt. List of the Lepidoptera collected by Mr. H. B. Van Rhijn in Sumatra,* by P. C. T. Snellen. Some new Pediculini,* by E. Piaget; 3 plates. Remark on *Phyllopteryx elongata* Snell., by C. Ritsema Cz. Addition to the "Comparative Studies on Ant Guests and Termite Guests," by E. Wasmann. Remarks on Lepidoptera from the island of Tanah-Djampea near Celebes,* by P. C. T. Snellen; 1 plate. Remarks on Lepidoptera from the island of Belitoeng [near Sumatra],* id.; 1 plate. *Apogonia destructor* n. sp., by Dr. H. Bos; 2 plates. Some remarks on a study by Mr. David Sharp on the structure of the prosternum in the Rhynchophoridæ, by E. Everts; 1 plate. List of the spinners [Arachnids] collected by Dr. A. M. J. Bolsius at Soemenep in the island of Madura, by Dr. A. W. M. Van Hasselt.

**Histoire Physique, Naturelle et Politique de Madagascar**, publiee par Alfred Grandidier. Vol. xxii, Histoire Naturelle des Coleopteres, par M. Kunckel d'Herculais. Tome II—Atlas, 2e Partie. Paris, 1890; plates 26-54.

**Entomologiske Meddelelser** (Copenhagen), Tredie Bind, 1, 2, '91.—Catalogue of the Coleoptera of Denmark (Staphylinidæ, Part III), by F. Meinert. *Bembex rostrata*, its life and instincts, by C. Wesenberg-Lund. Notes on the entomological fauna of Greenland, by W. Lundbeck. On *Ibalia* Latr.,* by H. Borries. *Pediculus humanus* L., and its mouthparts, by F. Meinert; 1 plate. Review of the Danish Chrysididæ, by H. Borries.

Bibliotheca Zoologica (Cassel), viii, 1, 1891.—Researches on mimicry as a basis for a natural system of Papilionidæ, by Dr. E. Hasse (to be continued). ix, 1891. Contributions to the knowledge of the Chilopods (glands, coxal organs, vascular system and visceral nerve system), by Dr. C. Herbst; 5 plates.

# Doings of Societies.

The Entomological Society of Washington, Oct. 1, 1891.—The following persons were elected members of the Society: E. W. Doran, A. G. Nasius, F. C. Test, W. T. Swingle, active members; H. E. Weed, W. H. Harrington, E. A. Popenoe, corresponding members.

Mr. Heidemann exhibited some interesting new species of Capsidæ taken the past season on Red Cedar, Willow and Linden.

---

* Contains new species other than North American.

Mr. Ulke exhibited and remarked on the habits of a number of rare or new aquatic Coleoptera found by him the past Summer in the Blue Ridge Mountains, near Monterey, Md.

Mr. Ulke also exhibited a pale larviform female of a species of *Phengodes* which he found abundantly in the Blue Ridge Mountains, no males, however, being discovered. The species was thought, by Prof. Riley, to be *Ph. laticollis*, and the relative abundance of the males and females of *Phengodes* was discussed by Riley and others.

Mr. Schwarz exhibited specimens of *Emphylus americanus* taken by H. H. Hubbard and himself in a colony of *Formica sanguinea* near Alta, Utah, at an elevation of about 9000 feet.

Mr. Ashmead read a paper on the peculiar Chalcid genus *Melitobia* Westw., in which he discussed (1) its synonymy with *Anthophorabia* Newport, concluding that *Melitobia* should take precedence; (2) its structure and position in a classificatory system, deciding that it belongs to the subfamily Tetrastichinæ and not with the Elachistinæ, where it is now placed; and (3) its habits, recording the rearing of *M. megachilis* Pack. from *Megachile centuncularis* Linn., *M. pelopæi* Ashm. from *Celopæus cementaria* in Kansas by Prof. Popenoe and in Florida by himself; and a new species which he described as *M. chalybii*, bred from the cells of *Chalybeon cœruleum* taken in Maryland.

Discussed by Messrs. Howard, Theo. Gill, Riley, Schwarz and others.

Dr. Marx presented a paper entitled "Preliminary Notes on the Classification of the Ixodidæ," in which he discussed the views of previous authors on the classification of these parasites and concluded to accept with some modification the scheme of Koch as follows: Order, Acari; Suborder, Cynorhastes; Tribe I, Cetocari with families, Argasidæ and Eschætorephalidæ; Tribe II, Antiocari with families Hæmelastaridæ, Ixodidæ and Rhipistomidæ.

The paper also included generic synopses of the genera of the several families. The scheme differs from Koch's in adding one new family, and suppressing one genus and adding three new ones. The paper was discussed by Prof. Gill and others.

Mr. Howard read a note on the "Appearance of Mealy Bugs parasitized by Leptomastix," in which he referred to the habits of the species of this Encytrid genus of Chalcid parasites, and said that his attention had been recently called by Miss Sullivan to the curious fact that Mealy Bugs parasitized by *L. dactylopii* almost entirely lose their waxy secretion and swell up into yellow objects closely resembling dipterous puparia, which resemblance is heightened by the fact that the parasite in issuing cuts free a cap at the end of the scale just as the Dipterous insect forces off the end of its puparium. Discussed my Messrs. Riley, Ashmead and Howard.

Prof. Fernow gave a report on the results in Europe of the use of the new insect lime against *Psilura monacha* the use of which he stated had been a perfect success. He described the process of quarantining infested areas by surrounding them with poles which are then smeared with the ne, and also various machines used to apply the lime to trees. Discussed by Prof. Riley and others.

Prof. Riley presented a paper entitled "A New Herbarium Pest," in which he described the transformations and habits of a small Geometrid moth (*Carphonera pelearia* nov. gen. et sp.) which, during the last two years, has seriously infested and damaged the herbarium specimens in the Botanical Division of the Agricultural Department. These larvæ were first noted on plants from the southwest United States, and have confined their work in the main to plants from that section, but are also spreading to eastern plants. A list of the particularly infested plants furnished by Mr. Dewey, of the Botanical Division, was given. A description of the insect, which is a new species and will require a new genus for its reception, was given, and figures of all stages were exhibited. Various means for the control of this pest were given (see "Insect Life," iv, Nos. 3 and 4).

Prof. Riley gave some additional notes on *Panchlora viridis*, in which he referred to the receipt of two additional specimens, one from Gustave Gutenberg, of Pittsburg, and the other from Carl Gissler, of Brooklyn. The first of these, shortly after capture, gave birth to a number of living young and afterwards extruded an imperfect egg-cluster including a number of unhatched eggs; and the other, on dissection, was found to contain a perfect egg-cluster with the young nearly mature and ready to emerge. This egg-cluster, which differs widely from that of the other roaches, was described and a figure of it exhibited.

Prof. Riley described the modifications of the abdomen in *Panchlora* which afforded the space necessary for the escape and pre-natal development of the young within the abdomen.

The enveloping egg-sac of other roaches was in this species reduced to a scarcely discernible pellicle, which did not cover the eggs entire, but was limited to the inner or concave half of the egg-mass (see "Insect Life," iv, Nos. 3 and 4).

C. L. MARLATT, *Recording Secretary*.

## ERRATA.—Vol. II.

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" 180, 5th line from top, for do *read* no.

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AND

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OF

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◇

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# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

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## NOTES FROM NEW WINDSOR.

EMILY L. MORTON, New Windsor, N. Y.

### **ISA TEXTULA** H.-S.

Reading the last number of ENTOMOLOGICAL NEWS (October) I noticed a short paragraph by Mr. Dyar on the genus *Isa*. Dr. A. S. Packard having identified a small *Limacodes* for me as *Isa textula*, and as the moth seems but little known, I have written a short account of the species, which I have raised from the eggs and back again through all its changes.

*Isa textula* is a small moth nine-tenths of an inch in expanse, of a very satiny texture, with long fringes to all the wings, the color a pale wood color as light as white pine; on some specimens there is a faint indication of a t. p. and t. a. line broken and extending only half across the forewings, but in many specimens this is entirely wanting. The eggs are laid singly, scattered about, and, like most of the *Limacodes* eggs which I have seen, are without form, looking like tiny drops of gelatine, or coagulated dew, invisible to the naked eye on the leaves, but on white paper having a slightly yellowish tinge, increasing with the growth of the larva within, but nothing more than a tiny, irregular shining speck on the leaves, and hatch in from eight to ten days.

The young larva when first hatched are also almost invisible, and, even after the first moult, look only like a small, colorless aphis on the leaf. The third moult shows a lilac mark in the centre of the dorsum increasing with the growth, until the last moult, when it resembles a rude maltese cross, of a pinkish or purplish brown, surrounded by a yellow border with a central square dot on the elipse-shaped pea-green larva.

The food-plants are the chestnuts, both horse and *Castanea visca*, English and wild cherry, oak, basswood, and probably other trees, as most of the *Limacodes* are very general feeders. On wild cherry the larvæ take from eight to ten weeks to come to their growth; on chestnut a somewhat shorter period, but it depends on what may be the heat or cold more than the food-plant. I have usually fed the larva on wild cherry, as it is not infested with aphides, and during the long period of growth from egg to cocoon it does not require so much time and attention to keep the food-plant clean and sweet. The larvæ spin their cocoons about September 5th to 20th, a small, roundish, brown, pod-like cocoon, with the usual lid of the *Limacodes*, and the moths hatch the following season from the 8th to the 25th of July, almost always in the afternoon, and remain hanging from the lid or side of the cage, until between half past eight or nine o'clock in the evening, when the males begin to seek their mates. *Isa textula* hangs with its abdomen curled over its back after the manner of *Pterophora diversilineata*.

Reading recently a number of the English monthly, "The Entomologist's Record," I was greatly interested in an account of "assembling," and never having seen the process described before in any of our journals, I will describe my method, which I hope may prove of interest, as the habits of the *Limacodes* seem to be so little known. I use a large gauze-wire cage about 20 x 15 inches, and 18 or 20 inches high, a door in the front and back, and painted a dark red or green, and place the newly-hatched female *textula* therein. About 8.30 P.M. I station myself by the cage with a glass tumbler and piece of pasteboard and watch for the males to come. If the *Limacodes* is a common one, like *E. stimulea*, *P. fraterna*, or *S. inornata*, there will usually be a score or more of males suddenly appearing, fluttering about the cage, always settling on the top or side, where the ♀ is resting, hustling each other with their wings and endeavoring to reach the coveted ♀ inside the gauze. Now, if you want specimens, you catch them by putting the tumbler over them slipping the pasteboard under and transfer them to the cyanide bottle, but if you want fertile eggs you shake the males from the glass into the cage by the door opposite the lightest part of the horizon. After the female has once paired no more males will be attracted, so you must make up your mind beforehand whether it is specimens or eggs you most desire. I never use a light if breeding is my object, as there are scarcely any moths that will mate where a light is used; this is the reason the cage is painted a dark color, as you can see even in a very dim light the pale colored wings of the tiny males as they flutter around and over the dark gauze. *Isa textula* is a rare moth here, and I have rarely seen more than three males attracted in one evening; a dark, still, warm evening is always better for assembling, but even if it blows quite freshly some of the *Limacodes* will be attracted provided your cage is a little sheltered by trees or shrubbery, on the side from which the wind is coming. With some of the Bombycidæ and Sphingidæ, you may keep your cage in the house, in an open window, but I have never had any success with the *Limacodes* unless the cage was in an open space away from the house. I do not see how *Sisyrosea inornata*, however small, could ever be mistaken for *Isa textula*, being a very differently constructed *Limacodes*, a very much slenderer and lighter built insect, the thorax only one-tenth of an inch across while in *inornata* it measures half as much again, and the abdomen of *inornata* is fully twice the size of that of *textula*. I think it probable *I. textula* has been confounded with *Limacodes flexuosa*, but Dr. Packard has also identified this for me, and my specimens are darker colored with shorter fringes, narrower wings, the primaries more produced at the apex, especially in the ♀. The larva of *S. inornata*, Dr. Packard says in his "Forest Insects," was first described in the Harris Correspondence; it is one of the most beautiful of the *Limacodes*, but though I have repeatedly had the eggs from captive females, I have never yet succeeded in rearing more than two or three larvæ back again to the pupa. I, however, know its whole history, and will some day write it out for the readers of ENTOMOLOGICAL NEWS. The larva bears not the slightest resemblance to that of *Isa textula*.

# Note on the Larva of Pachylia ficus (L.)

By T. D. A. COCKERELL, Kingston, Jamaica.

**Pachylia ficus** (Linn.)—Length about 80 mm. Head shiny jet-black, except the mouth parts, which are pale greenish. Thoracic shield dull black; the short caudal horn and the anal plates are black. Spiracles blackish. Body: back dull red, sides and under part dull pale bluish green, the two colors sharply defined; with a pale red longitudinal line near the lower edge of the red color on each side. On each of the last eight segments is an obscure narrow whitish oblique line on the green sides, crossing the spiracles. Legs pale bluish green, like the underside; sides of body wrinkled.

Food-plant, *Ficus* sp.

Described from a mature specimen about to pupate, found in Kingston, July 21, 1891. The moth emerged August 13th. Another mature larva, also found in Kingston, was brought to me by Anna Ashburn on the 2d of September.

The larva of this species is glaucous-green, whitish above, with a narrow yellow stripe on each side; until shortly before it changes to a pupa, when it assumes the very different coloration described above. This change of color is almost certainly protective, the red back being less conspicuous than whitish or green, as the larva crawls about in search of a suitable spot to pupate in.

In Weismann's "Studies in the Theory of Descent," p. 232, there is a foot-note by Prof. Meldola, in which this change is described from Burmeister. This account does not quite agree with the Jamaica larva, and if in South America the larva really changes after the third stage, and lives on the tree and feeds after assuming the red coloration, it apparently affords an instance in which a phase of color has arisen as protective at larval maturity, and has become so strong in the organization of the insect as to appear in some districts earlier in the life of the larva than is actually of use. It would be a curious case if it could be shown that this character had first appeared as useful, and had at length become, injurious by reason of its excessive development! However, it is not so in Jamaica, and if the account of Burmeister's larva is correct, it may still be that there are some special conditions of environment in the district where it was found, that render the red useful not only at pupating time, but also on the tree. This might be the case, for example, if it fed on a tree whose leave turned red at a certain time.

# PREPARATORY STAGES OF ICHTHYURA BIFIRIA Hy. Edw.

By Harrison G. Dyar, New York.

*Egg.*—Hemispherical or slightly conoidal, the base flat, but rounded at its edges; smooth under a lens, but under the microscope, covered with numerous, crowded, shallow depressions, which form by their edges narrow, roundedly, hexagonal reticulations. The color is dark gray before the egg hatches. Diameter 7 mm.

*First stage.*—Head shining black, labrum pale; width 35 mm. Body slightly flattened, whitish, cervical shield black; a few pale hairs; joints 5 and 12 are slightly enlarged dorsally; the lateral region, and joints 5, 7 and 12 dorsally are wine-red. Thoracic feet large, pale; the abdominal normal, all used in walking. Length 2.5 mm. The larva hatches by eating a round hole in the vertex of the egg, leaving the rest of the shell untouched. It lives, singly, in a shelter constructed by spinning two or more leaves together.

*Second stage.*—Head black and shining, the central suture deep; width 6.5 mm. Body flattened, pale whitish yellow, with narrow triplicate dorsal, and very broad lateral bands of dull wine color, as are also the humps on joints 5 and 12. Cervical shield and anal plate black; venter dull greenish; legs black.

*Third stage.*—Head flat in front, slightly bilobed, brownish black, but paler centrally around the clypeus; a few dark hairs; width 1.4 mm. Body pale yellow, joints 5 and 12 a trifle dorsal line; broad lateral and confused triple subventral lines, all dark brown. Cervical shield and anal plate blackish; scattered pale hairs arise from smooth, low, round tubercles, concolorous with the markings.

*Fourth stage.*—Head pale brown, shaded with black in front; jaws and ocelli black; a white shade on each side of the clypeus; width 2.6 mm. Body as before, but the lateral band is faintly divided by a double yellowish line, and joint 13 is nearly all yellowish. The round, smooth, piliferous tubercles are distinctly yellow in the yellow markings. Cervical shield small, bisected, pale brown; anal plate not distinguishable. Hair whitish, both from body and head. As the stage advances the colors become quite pale, and the appearance is much changed; humps on joints 5 and 12 very slight, dark purple. Ground color whitish ay, becoming pale purple, a triplicate dark purple dorsal line, ne central one most distinct, the others broader and diffuse. All se lines are more or less broken into mottlings. A similar stigmatal line with some purple mottlings subventrally; venter paler; spiracles black. The piliferous tubercles are normal in arrangement, much as the warts in *Halesidota*, row (4) small, posteriorly to the spiracles, row (7) apparently absent. The head is held out flat, as in *Gluphisia*.

*Cocoon.*—Composed of several leaves spun together and lined 1 threads.

*upa.*—Nearly cylindrical, flattened a little ventrally, gradually tapering posteriorly, but of nearly even width, no part enlarged; last abdominal segments rounded, cremaster long and slender, terminating in a knob that, under the microscope, is seen to consist of a row of radiating, strongly recurved hooks, which hold firmly to the silk of the cocoon. Color dark red-brown, the thorax and cases nearly black. Length 11 mm.; width 3.5 mm.

*Food-plant.*—Willow (*Salix*).

Larvæ from Yosemite Valley, Cal. These larvæ had but four stages, and there are two broods in a year.

*Ichthyura bifiria*, as well as *I. brucei* Hy. Edw., must come very near to *I. vau* Fitch, if they are not merely western forms of it, but the larva of *I. vau* is still unknown, so that it is impossible to compare the early stages.

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## A NOTE ON CYCHRUS.

By H. F. WICKHAM, Iowa City, Iowa.

"Arizona has not, to my knowledge, furnished even a specimen of Cychride;" (Dr. Horn, in Notes on the Biologia Centrali-Americana, monthly Proc. of Ent. Sec. A. N. S. June, 1886, p. ix.) During the Summer of 1890, while in the Pinal Mountains, about eighty miles from Tucson, my friend and companion, Dr. E. D. Peters, took four or five specimens of a *Cychrus* (*Scaphinotus*), which I thought to be *Snowii* Lec., near a little spring. Later in the day a search by myself resulted in the finding of another specimen.

Our knowledge of the distribution of *Cychrus* has been wonderfully extended during the thirteen years that had elapsed since the publication by Dr. Horn of his Synopsis in the "Transactions of the American Entomological Society." At that time but three species of the division *Sphæroderus* were known, all from the Atlantic region, none of them ranging farther south than North Carolina. Since then the labors of Mr. Ricksecker have resulted in the discovery of two more species (*relictus* and *regularis*) from the Spokane River region of Washington, both of these having been also taken by myself at Cœur d'Alene, Idaho, in company with the third western species only lately described by Dr. Horn ("Ent. Am." vol. vi, p. 71) as *Merkelii*. This shows *Sphæroderus* to be northern rather than northeastern in its distribution, an equal number of species having been found on each side of the continent, none, however, being southern forms.

*Scaphinotus*, as is shown by the first paragraph, extends into Arizona besides covering in its distribution the region assigned to it by Dr. Horn, in his paper cited, from New York south to North Carolina and thence west to Colorado a range afterwards extended some distance southwards by the discovery of *C.* (*Scaphinotus*) *Snowii* in New Mexico.

Doubtless, the division *Pemphus* will remain characteristic of the north Pacific coast fauna, though *Brennus* supposed, until lately, to be confined to the coast fauna proper, has been shown by me (ENT. NEWS, vol. i, p. 33) to inhabit parts of Montana. The species recorded, *C. marginatus*, has heretofore been reported only from the stretch of coast from Oregon to Alaska, and its occurrence in Montana is of great interest, adding, as it does, another species to those common to the great central chain of mountains and the far north. During the glacial epoch, or just following it, this species probably inhabited the stretch of country from the Rockies to the coast, but the gradual northward retreat of the face of the glaciated area so changed the climate of this intervening region that *marginatus* was unable to retain its place. The Montana form already shows some minor differences from those found on the coast, and only time seems needed to differentiate it as a distinct species.

Until the discovery of *C. Rickseckeri*, the species of *Cychrus* proper were limited in our fauna to two strictly Pacific forms, *angulatus* and *tuberculatus*, and one from Utah, *C. Hemphillii;* but the first-mentioned insect is reported by Mr. Ricksecker, in a letter to me, to occur as far east as Clark's Ford, Mont., though

I believe the centre of its distribution to be the Cœur d'Alene district of Idaho, where I took it on my visit in 1889. *C. tuberculatus*, reported from Vancouver Island, occurs also in the mainland at Portland, Oreg., and Tacoma, Wash., but is still rare.

A perusal of these lines will show that in this genus every one of the divisions, except *Pemphus*, which contains but a single species, has been found to have a distribution much wider than that known to science when last written up, and I await further developments with a great deal of interest. Cannot some of the readers of Ent. News furnish us with more notes on geographical distribution? Too little attention seems to have been paid this part of our science, and it is something in which every one can help.

## Second Additions and Corrections to the list of Dragonflies (Odonata) of Manchester, Kennebec County, Maine.

BY MISS MATTIE WADSWORTH.

(See Entomological News, vol. i, pp. 36, 55, and vol. ii, p. 11.)

**5e. Amphiagrion saucium Burm.**

1891, June 24, one ♀ in road.

**6c. Enallagma cyathigerum Charp. race annexum Hag.**

1891, June 16, one ♂ in meadow.

**6d. Enallagma exsulans Hag.**

1891, June 26, one ♂ near Lake Cobbosseecontee.

**6e. Nehalennia irene Hag.**

1891, June 9, one ♀ in road, near meadow; June 15, three ♀ ♀ in woods; June 19, one ♀ in woods.

**24a. Macromia illinoiensis Walsh.**

1891, July 10, one ♀ near brook.

**32.** This species called "**Cordulia cynosura** variety," in vol. ii, p. 11, is **C. (Tetragoneuria) spinigera** Selys.

All taken in 1891 have been identified, as all others have been, by Mr. Philip P. Calvert, of Philadelphia.

During the seasons of 1890 and 1891, additional specimens have been taken of several species noted as quite rare in the preceding lists. These are mentioned below.

**6a. Enallagma ebrium Hag.**

1891, June 16, two ♂ ♂ in meadow.

**6b. Enallagma civile Hag.**

1891, June 26, two ♂ ♂, one ♀ near Lake Cobbosseecontee.

13. **Æschna (Basiaeschna) janata Say.**

1890, June 21, one ♂ taken near brook. 1891, June 5 to 15, seven ♀ ♀, six ♂ ♂ taken near woods; June 15, a ♂ devouring a ♀ *Gomphus exilis* was taken.

17. **Gomphus parvulus Selys.**

1891, June 25, one ♀ near brook.

25. **Epitheca (Somatochlora) Walshii Scud.**

1891, July 30, one ♂ in meadow near brook; August 5, one seen flying.

26. **Epitheca (Somatochlora) forcipata Scud.**

1890, Aug. 14, one ♂ in meadow.

28. **Cordulia (Somatochlora) lepida Selys.**

1891, June, one ♂ ; June 26, one ♀ by roadside.

29. **Cordulia (Somatochlora) libera Selys.**

1890, June 19, one ♂ in woods. 1891, June 5 to 30, quite common in and near woods.

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## HYMENOPTEROLOGICAL NOTES.—II.

By Wm. J. Fox, Phila., Pa.

**Crabro nitidiventris** n. sp.

♀.—Black, shining; first two joints of the antennæ entirely, line on prothorax above, broadest laterally, tubercles, an elongated spot behind them, dot on tegulæ, spot at base of wing, line on the basal half of the scutellum, two transverse spots on the upper surface of the metathorax, the apex of anterior and medial femora, the tibiæ and tarsi, and a large macula on each side of segments 2–5, all yellow, the extreme apex of the posterior tibiæ and the apical tarsal joints, brownish. Head quadrate; clypeus, front behind the antennæ, and the posterior orbits with bright silvery pubescence, most dense on the former; head clothed with pale fuscous hairs, finely and sparsely punctured, the punctures on the cheeks very delicate, strongest on the front; vertex depressed, with a strong, pear-shaped pit on each side near the top of inner eye margin; frontal impressed line deep; clypeus feebly carinated medially, the anterior margin armed with three teeth, which are widely separated; apical half of mandibles ferrugineus, the apex bidentate; scape of antennæ narrow, longer than the first three joints of the flagellum united, second joint of the flagellum nearly three times as long as the preceding one, and about two and a half times longer than the succeeding one. Thorax and legs sparsely clothed with pale fuscous pubescence, pertaining to silvery on the pleuræ and pectus; the thorax with fine, separated punctures, very fine on the pleuræ; prothorax slightly emarginate above; postscutellum parted by an impressed line; metathorax with two transverse enclosures on the er surface, the medial sulcus very strongly marked, and is deepest ally and on the posterior face, all the sulci marked with strong foveæ, posterior face with the lateral edges marked with a series of rugæ, re the apex there are several very strong, transverse striæ; the top the metapleuræ marked by a series of strong foveæ, which form an angle at about the middle; wings hyaline, tinged with brownish along the costa, nervures brown, the stigma black. Abdomen glabrous, sparsely clothed with pale fuscous hairs, most dense beneath and on segments 4-6 above; last segment above with a longitudinal, medial carina, which does not extend beyond the middle. Length 11—12 mm.

Two specimens, Camden County, N. J., July 5, 1891, and Illinois (coll. Amer. Ent. Soc.). The specimen from Illinois has the middle clypeal tooth indistinct. Related to *C. obscurus* and *C. contiguus.*

**Crabro excavatus** n. sp.

♀.—Black; head transversely quadrate; front subopaque, with fine and exceedingly close punctures; near the inner orbits, before the anterior ocellus, there is a short, oblique sulcus; vertex shining, with deep separated punctures; face very narrow in the region of the antennæ, the space between the eyes at this place is a little broader than the length of the third antennal joint; clypeus well carinated, the anterior margin entire, rounded out; antennæ short, the third joint about two and a half times longer than the second, and is a little longer than the two following joints united; the ocelli situated in slight, but distinct, depressions; mandibles strongly bidentate at apex. Prothorax emarginate medially; dorsulum with very strong punctures, the punctures confluent anteriorly; scutellum and postscutellum with strong, separated punctures, those on the postscutellum feeblest; metathorax roughened, with a strong medial sulcus, which extends to about the middle, where it is interrupted by a transverse ridge, the posterior face rugose, depressed medially; mesopleuræ rugose; wings subhyaline, nervures blackish. Abdomen shining, the segments depressed at base and apex, with distinct, separated punctures, beneath segments 2-5 smooth, with the exception of a series of strong punctures, which extend from side to side at about the middle; the last segment above strongly excavated; mandibles, except base and apex, prothorax above, tubercles, an elongated oblique spot on the mesopleuræ beneath the tegulæ, scutellum and two spots on the dorsulum at the anterior-lateral angles of the scutellum, the postscutellum, legs, the tarsi lighter, the first abdominal segment above, except the apical margin, which is black, the second above and beneath, except apical portion, all reddish brown;* scape and following two antennal joints, and a large, ovate spot on the second abdominal segment, situated at about the middle, yellow; head and thorax above clothed with short, erect, fuscous hairs; the clypeus, face, cheeks and thorax beneath with silvery pubescence. Length 9—10 mm.

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* This may be due to being left too long in the cyanide bottle, but as part of the antennæ and two spots on the abdomen are yellow, it is probable that it is the natural color.

♂.—Differs from the female as follows: joints five and six of the antennæ roundly emarginate beneath, the seventh joint slightly so; the third antennal joint very slightly, if any, longer than the fourth; the metanotum with eight or nine strong ridges, which extend from the base to the transverse ridge; wings darker along the costa. Abdomen strongly punctured, the punctures closer than in the female, the first segment, except the base and apex, and a transverse fascia on segments 2-5 above, reddish brown, the fascia on the third segment narrowest; beneath the abdomen is finely and rather closely punctured. Length 9 mm.

Described from two females and one male specimens. Collected by Mr. Chas. W. Johnson, in Florida, in the vicinity of St. Augustine.

(To be continued.)

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# RHEXIDIUS.

BY EMIL BRENDEL, M.D.

This genus belongs to the second group of the tribe Trichonyni according to the arrangement of Mr. Achille Raffray, the first group having the posterior coxæ distant and the first ventral segment large, including the genera *Trichonyx* and *Amauronyx*, while the remaining genera, or the second group, have the posterior coxæ contiguous, or nearly so, and the first ventral segment very short, in some hardly visible. Among the latter group my attention is called to the genera *Trogaster*, *Rhexidius*, *Oropus* and *Prorhexius*.

*Trogaster* is characterized by having the first ventral segment visible (according to Mr. Raffray), while in the others it is said to be invisible, except as a button between the coxæ. But this, according to my investigation, does not apply to *Rhexidius* and *Oropus*, on which, by lifting the femur it can be traced to the sides of the abdomen, where it is even more visible than in the middle. Thus the difference between the four genera is rather inconspicuous.

With the genus *Trogaster* I am not acquainted, but by the description of Dr. D. Sharp, it should have an analogous form with *Oropus* and *Rhexidius*, and Capt. Casey indicated to me as the differences: the pronotum having the lateral spinous tubercle rer the middle, the frontal sulcus not reaching the occipital æ and having different forms of the antennæ in the sexes.

The only difference between *Oropus* and *Rhexidius* lies in the possession of a minute spinous tubercle at the sides of the pronotum in a line with the lateral foveæ. The length of the second ventral segment, which ought to be measured at the sides, not in the middle, where commonly intubation takes place, is larger, but in length not much more than subequal to the third and fourth ventrals; therefore *Prorhexius* is identical with *Rhexidius.*

Now I will describe a new species of *Rhexidius* which makes the difference between the other two genera very doubtful, and perhaps brings them very near to *Trogaster.*

**Rhexidius trogasteroides** n. sp.

♂.—The forms of the several parts of the body is exactly like *Oropus;* uniformly reddish brown. Length 1.66 mm. Head and prothorax granulated (as in *Rhexidius granulosus*), elytra densely punctured, abdominal dorsum nearly smooth. The head very transverse, though less so than in *R. granulosus*, occiput triangularly impressed at its base, occipital foveæ large, near the eyes and in a line with the anterior part of the eyes; the frontal ridge and the subjacent arcuated sulcus limited half way between foveæ and the supra-antennal swelling, the sulcus ending in a deep puncture just in front of the respective fovea (*Trogaster*). Antennæ as long as the head and half of the prothorax; joint 1 as thick as the width of the eye, cylindrical, longer than wide; 2 globular, two-thirds as thick as the first; 3 and 4 equal, rounded, somewhat transverse, much smaller; 5 projecting inside in form of a wedge, half as long outside, and three times as wide as the fourth; 6 as wide as 5, inflated inside, here as long as the first joint, and outside at the insertion as long as second; 7–10 gradually increasing in width, transverse, trapezoidal, together as long as the second, third and fourth conjointed; 7 as wide as the second; the 10th, or the base of the last joint as wide as the first; 11 as long as the four preceding, and beyond the middle more than twice as wide as the first joint (*Trogaster*). Palpi as in *Oropus.* Prothorax as in *Rhexidius* in sculpture, but the median sulcus has a deeper place in the anterior third, and the sides are rounded anterior to the line of the foveæ, here suddenly forming a sharp edge with a very short emargination producing a tubercle similar to *Oropus*, except that the tubercle is not as sharply pointed. Elytra as in *Oropus*, with four basal punctures and the respective lines, the third longer than the second, the fourth short and recurrent. Abdomen as in *Oropus*, with the dorsal border punctured, the penultimate ventral with a transverse impressed line; ♀ unknown.

Three specimens were discovered on Chestnut Ridge, Pa., by P. Jerome Schmitt, who deserves great honor as a circumspect entomologist.

A comment as to the generic differences is unnecessary, but there are two more specimens, ♂ and ♀, which were discovered in Franklin County, Pa., by my friend, H. Ulke, who kindly loaned them to me a year ago; they are in his cabinet, and may bring these genera still nearer together.

**Rhexidius intermedius** n. sp.

Uniformly brown. Length of ♂ 1.5 mm.; ♀ 1.66 mm.

♀.—Head as transverse as in *Oropus*, somewhat punctulate. Antennæ, without the last joint, as long as the width of the head, the last joint as long as the first and second together. Eyes very much smaller than in *Oropus;* occiput perpendicularly declining toward the neck in an angulated line from the sides to the middle of the base. Prothorax little wider than the head with a twice interrupted median sulcus and a straight transverse sulcus, which is triangularly dilated in the middle, ending in pubescent foveæ laterally situated inside of a slightly ovate depression, the base strongly punctured, the disc slightly uneven, impunctate; no crenulation or a spine at the sides. Elytra as in *Oropus*. Abdomen at the base in the middle depressed, the depression divided by a short carina; the borders of the first visible segment divergent; the first three visible segments equal, one-quarter of their width long, fourth and fifth shorter; ventrals nearly equal in length.

♂.—Has the ninth and tenth joints of the antennæ shorter, more transverse, and the last longer than in the female. Head, prothorax and elytra, more visibly punctulate. Eyes somewhat larger. Prothorax with the median sulcus not interrupted, but abbreviated in the anterior third. Abdomen as in the female, but the junction of the fourth and fifth segments transversely impressed.

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## NOTES ON ARKANSAS LEPIDOPTERA.

By R. R. Rowley, Fort Smith, Ark.

Five hundred miles to the southwest of Curryville, Mo., where the writer has spent half a score of years in the study of Entomology and Geology of a most interesting region, is the "Border City," Fort Smith, Ark. A residence here since the middle of September has given him but limited opportunity to enter into the study of nature, but he could not, if he wished, close his eyes on the fairy-like creatures that flit from blossom to blossom in this city of flowers. The first finds were two splendid larvæ of that magnificent moth, *Citheronia regalis*, on a persimmon tree, where, from indications, a number of other caterpillars had been feeding; two larvæ of *Eacles imperialis* on maple; two of *Ceratomia* *tor* and one of *Telea polyphemus* on elm; larvæ and cocoons *ctias luna* on pecan, and one wandering caterpillar of *Dei-ila lineata*. A fine pupa of *Macrosila cingulata* was found in weet-potato patch and several ragged imagos, brought to the ss-room by pupils, indicate an abundance of this beautiful moth.

The first butterflies noticed were *Neonympha sosybius*, flitting aimlessly about the streets, and occasional specimens of *Papilio philenor* and *Limenitis ursula*. While *Colias eurytheme* was quite common, *C. philodice*, *Pieris protodice* and *P. rapæ* seemed much less abundant.

In October, *Callidryas eubule*, *Terias nicippe*, *T. lisa*, *Nathalis iole*, *Euptoieta claudia*, *Phyciodes phaon*, *Pamphila huron*, *P. phylæus* and *Pyrgus tesselata* were plentiful, the first two species at cultivated flowers and the others at the blossoms of *Helenium tenuifolium*, a thrifty weed about the streets and roads here.

Three fine examples of *Colias cæsonia* were taken at flowers, one *Grapta interrogationis* in the woods, one *Paphia troglodyta* at mud, four *Junonia cœnia* by the roadside and on flowers, several specimens of *Pyrameis cardui*, one *P. huntera*, two *Erisia texana*, a few *Phyciodes tharos* and a number of *Danais archippus* on *Helenium tenuifolium* blossoms.

A single ♀ *Agraulis vanillæ* was taken on Geranium flowers in the shade, about five o'clock P.M., late in October. One dark specimen of *Pyrgus*, probably a variety of *Tesselata*, was captured November 7th. The last butterflies seen, were *Terias lisa*, *T. nicippe*, *Pyrgus tesselata* and *Nathalis iole* on the 16th of September. Spring and Summer will doubtless add many more species to this list. The food-plant of *Iole* here is probably *Helenium tenuifolium*.

For assistance in the identification of a few of the species mentioned above, the writer is indebted to Mr. Wm. H. Edwards, of Coalburgh, and Dr. Henry Skinner, of Philadelphia.

For the determination of a plant to Prof. Geo. Vasey, of Washington, D. C.

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"An electric insect killer is the latest novelty in that line. It is formed by a cover of wire gauze, which is placed over a lighted candle. The gauze is an electric circuit, and when insects touch it they are killed."

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of Entomological News solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

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**To Contributors.**—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. Entomological News has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—Ed.

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☞ A SUBSCRIBER has sent us a remittance with name and address not given on subscription blank accompanying the same. We make it a rule to acknowledge the receipt of all remittances, and beg to be advised by those who have sent in their subscriptions and have received no acknowledgment.—TREASURER.

OWING to the sickness of the editor, we are unable to publish a plate with this number of the NEWS. Correspondence attended to soon.

AFTER many unexpected and unavoidable delays, the new Check List of Lepidoptera of Boreal America, by Prof. John B. Smith, has been completed, and is now ready to mail to applicants. The price is $1.00 per copy.

WILL the contributor who favored the NEWS with the interesting paper "On the species of *Oecanthus* Serv." kindly communicate with the editor, as his letter has been mislaid and his name is not attached to the manuscript of the paper referred to?

A VERY good suggestion comes to us from a progressive subscriber, viz.: to give each month a list of species added to the insect fauna of North America. This information will be appended to the "Literature" column, and we trust that it will be an improvement that will be appreciated by entomological workers.

A NEW VARIETY OF PAMPHILA.—*Pamphila massasoit*, var. *suffusa* Laurent. The describing of the many variations of Lepidoptera caught in the field is of value as well as of interest to the entomological world, but the attaching thereto of a name to burden our already over-crowded catalogues, seems to me to be little less than an entomological sin, but where the form described teems in numbers, or is known as a local variation, I think the same should be given an appropriate name. In the Pamphilas, particularly, there are several such forms or variations occurring among the species found around Philadelphia. One of these, *Pamphila massasoit*, var. *suffusa*, makes its appearance about July 4th. It is found in low meadow- or swamp-lands. The variation consists principally in the yellow markings of the under surface of the posterior wings being almost obliterated by a suffusion of dark brown, while the under surface of the anterior wings is of a uniform dark brown, the light colored margin found in the normal form being entirely wanting. About one in every ten specimens caught will be found to be *suffusa;* the variation is generally found among the males, but also occurs in the females, but more sparingly where it occurs in the females. The insect is without the usual yellow spots on the upper surface of the wings.—PHILIP LAURENT, Phila.

SYNONYMS OF NOCTUIDÆ.—Mr. W. H. Patton has given in ENTOMOLOGICAL NEWS, vol. ii, p. 206, a synonym of "*Homohadena infixa* Wlk." which requires correction. I have seen Walker's type, in the British Museum, and find it exactly like the type of Mr. Grote's *H. kappa*, which is also in the British Museum. *H. incomitata* and *H. badistriga* are both as good species as are usually found in the Noctuidæ, and come at exactly opposite ends of the synoptic table in my revision of the species (Proc. U. S. Nat. Mus. xiii, 399). Harvey's type is not rubbed, and I have seen any number of specimens just like it. That *Xylophasia infixa* Wlk. probably referred to a species of *Homohadena* I indicated in my revision of *Xylophasia* (Proc. U. S. Nat. Mus. xiii, 446), but was not able to fix it positively. It would be interesting to know upon what Mr. Patton bases his synonymy.—JOHN B. SMITH, New Brunswick, N. J.

Prof. KELLICOTT'S "Note on Exceptions" brought vividly to my mind the number of interesting varieties of *Caberodes confusaria* that had escaped from my collecting-bottle by its remarkable powers of resisting the action of cyanide. I have often sought for an explanation, but without definite results. In my observations, Hymenoptera and Diptera are the most sensitive to the fumes of cyanide, which I have thought might arise from their nervous activity producing rapid respiration. Water beetles as a rule are slow to yield to its influence, which is probably the result of their having a supply of pure air under their elytra which would last for a while. Newly-hatched beetles may remain for a whole day in a strong bottle and revive again when exposed to the air, the result of their partially dormant condition. *Caberodes confusaria* is an active insect, and therefore ought to breathe rapidly, and so get the full benefit of the poison, but in its case neither the principle nor the poison works satisfactorily.—I. ALSTON MOFFAT, London, Ontario.

I THINK a "wave" of *Erebus odora* must have struck Colorado this Summer. I have occasionally met with this species in the State before, but not more than one example in a season. This year, however, was a notable exception; one day last June I took one on the sidewalk at Colorado Springs; the same evening I found one on the platform at Cañon City Depot. The next morning I reached Salida just at daybreak; during the two days I stayed there I took about a dozen pretty fair examples. These were resting on the lamp-posts, or on the ground close by. It was quite a rainy time in this part of Colorado, and I saw fragments of a good many in the mud. The lamp trimmer told me they had been quite a nuisance for more than a week, flying into houses and stores where there was a bright light, in many instances causing alarm (he called them bats). On my return from southwest Colorado, two weeks later, our train stopped at Salida at 9 A.M.; during the "twenty minutes for refreshments" I looked round under the lamps. In a coal-box, near one, were two battered examples of *E. odora*, but on the lamp-post, about seven feet from the ground, was a specimen of the silken, gray beauty *zenobia*, the first I had seen alive. I have visited this district many times in the last seven years, and my late friend, W. S. Foster, a keen collector, resided there two years, yet we never saw either species there before, and I feel pretty certain that their occurrence this year is something unusual.

David Bruce, Brockport, N. Y.

A specimen of *Xylocopa*, received from Mr. H. F. Wickham, bearing the label Fort Yuma, Cal., turns out to be the Cuban *X. cubaecola* Lucas. To the best of my knowledge, this species has not been recorded from any other locality, although it occurs, probably, in Mexico. The following table will assist in determining the Californian species of *Xylocopa:*

Abdomen bottle-green, bronzed; front in ♀ with a strong projection. Length 22—25 mm. . . . . . . . **californica** Cr.

Abdomen bronze-purple; frontal projection almost obsolete, having the appearance of a faint tubercle. Length 18 mm. . **purpurea** Cr.

Entirely black ♀; ♂ of *cubaecola* entirely fulvous, with fulvous pubescence; ♂ of *orpifex* with the face and clypeus yellowish.

Ventral abdominal segments strongly carinated; clypeus with the punctures becoming somewhat obsolete medially; ♂ fulvous. Length ♀♂ 18—23 mm. . . . . . **cubaecola** Luc.

Ventral segments of the abdomen faintly carinated; clypeus equally punctured throughout; ♂ with the thorax clothed with pale pubescence. Length ♀♂ 17—18 mm. . . . **orpifex** Sm.

William J. Fox.

While on a trout fishing trip on the Nepigon River last July we broke camp some forty miles up river, after three days' of showery weather, and, with birch-bark canoes, started for Red Rock, the Hudson Bay Company's post at the mouth of the river. There are a number of rapids around which canoes and camp equipage must be carried, and at which the different meals are usually cooked, while the Indians are making the portage. On July 14th, a hot day following the rains, we were portaging around Cameron Pool and rapids, when one of the party, who had descended the higher land to the bank of a little creek, came rushing back with an ordinary fish landing-net containing ten fluttering *Limenitis arthemis* which he had caught with one stroke. Of course they were ruined, but the entomologist of the party, upon investigation, found the ashes, where camp fires had been made upon the banks of the creek, completely covl with this beautiful butterfly, one space of about four and a half feet iameter being entirely hid by a gorgeous coloring of purple, black white, which shone beautifully in the bright sun. The first stroke of net disturbed them, but 47 specimens were taken as they hovered ut without moving from the spot, and over 100 were taken within a space of 30 feet square. They seemed to be attracted by the brine or water thrown from the pans after freshening bacon and salt pork at the camp fires. Paddling down the creek we passed another congregation of like proportions, but we had a forty-mile canoe voyage to complete by ten o'clock that night in order to catch a steamer at Port Arthur, so they were not disturbed. It is not often an entomologist stumbles upon a sight so beautiful.—FRANK S. DAGGETT, Duluth, Minn.

*Perophora melsheimerii*.—This elegant case bearing larva was taken at Sugar Grove, O., September 26th, feeding on oak. The single larva examined differs from that described by Harris in the absence of the antenna-like appendages at the side of the head; this is also characterized by Packard in "Forest Insects." It is also slenderer than others described, nor are the "spiracles so situated as to be visible from above," except the last pair. The prothoracic segment is not dark like the head, but concolorous with the whole anterior third, *i.e.*, pale brown with diffuse lateral stripes. The case, too, whilst of the same general type as that figured by Harris, is a more finished piece of architecture. One side, the floor, is elliptical and plane; the opposing piece, the roof, is also elliptical, but both longer and wider and cut with the mid-vein in the longer diameter, so that when the edges of the two are sewn together it arches up, forming a roof; the mid-vein thus forms the ridge of the roof; this also projects at the ends constituting the verandas over the round openings. The dimensions are: length, 28 mm.; width, 8 mm.; height, 6 mm.; diameter of openings, 4 mm.

I have not seen the artificer at work. It would certainly be interesting to observe how, with the simple tools at his disposal, so wonderful a house is built. I imagine that the plan of procedure is about as follows: two closely parallel leaves are selected; these are spun together along the elliptical outline of the finished product, the plane one being first strengthened by a silken lining; then by cutting away the leaves about the outside the case is set free.—D. S. K.

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## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

# Entomological Literature.

ZOOLOGISCHER ANZEIGER (Leipzig), Nov. 2, 1891.—The lateral eyes of spiders, by K. Kishinouye, figs. On the anatomy of the male sexual organs of the Honey Bee, by G. Koschewnikoff.

TRAVAUX ET MEMOIRES DES FACULTES DE LILLE. I, No. 4, 1891.—The wax of Bees (analysis and adulterations), by A. and P. Buisine.

LE NATURALISTE (Paris), Nov. 1, 1891.—Protective resemblance in European Lepidoptera, by F. Plateau; figs. Description of new Lepidoptera,* by P. Dognin; *Lafajana* n. gen. Development of *Hydrophilus piceus*, by L. Planet; figs.—Dec. 1, 1891.—Diagnoses of new Lepidoptera,* by P. Dognin. Habits and metamorphoses of *Coræbus amethystinus* Oliv., by Capt. Xambeu.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Oct. 3, '91.—Two new species and a new genus of African Lepidoptera,* by F. J. M. Heylaerts; *Gymnelema* n. gen. Melanges Entomologiques: VII. Diagnoses of Coleoptera from the Congo,* by A. Duvivier; *Djabiria*, *Phrynetoides* n. gen. Dichotomous table to aid in determining the Belgian species of Coleoptera Heteromera (last part), by L. Coucke. Enumeration of the Hemiptera of Belgium, by E. Coubeaux; Heteroptera. *Papilio machaon* var. *marginalis*, by M. Robbe.

NOTES ON CALOSPASTA Lec., by G. H. Horn, M.D. (reprint from Proc. Amer. Philos. Soc. xxix, pp. 99–102), Oct. 27, 1891. A synoptic table of the species is given. *C. histrionica*, *C. morrisoni*, S. Cal., n. sp.

REVUE DES SCIENCES NATURELLES DE L'OUEST, 4, October, 1891, Paris.—General considerations on the classification of the Acarines, followed by an attempt at a new classification, by Dr. Trouessart (to be continued).

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), Nov. 20, 1891.—Organization of a thoracic ganglion in some Coleoptera of the tribe Melolonthina, by A. Binet. A peculiar Acariasis on Paduan fowls produced by a new Acarine species, *Lophoptes patavinus*, by P. Megnin; figs. On the intermediate host of *Echinorhynchus gigas* in America, by C. W. Stiles [*Lachnosterna*].

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xvii, 21, November, 1891.—Some remarks on the German species of *Calathus*,* by C. Verhoeff. List of a collection of Coleoptera from Cordoba in Argentina, by Dr. Frenzel. On doubtful species of *Rhizotrogus*, a clear answer to Herr E. Brenske, by Dr. G. Kraatz.—No. 22, November, 1891.—A new contribution to the knowledge of the German *Saldæ*,* by C. Verhoeff. Diptera collected by Herr F. Grabowsky in Hartz Mountains, by V. von Roeder·

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* Contains new species other than North American.

New Singing Cicadæ from Cameroon collected by Dr. Paul Preuss,* by Dr. F. Karsch; *Trismarcha*, *Nablistes*. n. gen.

Denkschriften der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe, lvii. Wien, 1890 (1891).—Comparative Studies on the Germ-band (Keimstreif) of Insects, by V. Graber; 12 plates, 38 figures.

Ergaenzungsheft zum 68. Jahresbericht der Schlesischen Gesellschaft fur vaterlandische Cultur. Breslau, 1890 (1891).—Contributions to the knowledge of the European Zoocecidæ and their distribution, by G. Hieronymus.

Verhandlungen des Naturhistorischen Vereins der preussische Rheinlande, Westfalens und des Reg.-Bezirks Osnabrueck. xlviii, 1. Bonn, 1891.—Biological Aphorisms on some Hymenoptera, Diptera and Coleoptera, by C. Verhoeff; 3 plates.

Ofversigt af Finska Vetenskaps-Societetens Forhandlingar, xxxii, 1889–90. Helsingsfors, 1890 (1891?).—Contributions to the knowledge of the Coleopterous Fauna of Southwestern Siberia—Curculionidæ,* by J. Faust

Berichte der Naturforschenden Gesellschaft zu Freiburg I. B., v, 1. Freiburg I. B., 1890 (1891).—On reproduction of the Diplopods (Chilognatha), by O. von Rath; 1 plate.

Atti della R. Accademia delle Scienze di Torino, xxvi, 2, 1890–91.—The European species of the genus *Chrysoloxum* Meig.,* by Dr. E. Giglio-Tos; 1 plate.

Jahrbucher des Nassauischen Vereins fur Naturkunde, 44. Jahrgang. Wiesbaden, 1891.—Observations on the manner of living and development history of some indigenous species of beetles, by Dr. Buddeberg. Macrolepidoptera of the lower Rhine country, 2d part, by A. Fuchs. Catalogue of the Coleoptera of Japan, 2d supplement, by H. von Schoenfeldt.

La Naturaleza, 2d series, II, 1. Mexico, 1891.—Description of indigenous Coleoptera, by Dr. D. Eugenio Duges (for new species, see *post*); 2 plates.

Proceedings of the California Academy of Sciences, 2d series' III, 1. Sept. 1, 1891.—Description of the larva of *Dascyllus davidsonii* Lec., and a record of its life-history, by J. J. Rivers; 1 plate. New species of Scarabæidæ, id (see *post*).

Bulletin of the Buffalo Society of Natural Sciences, v, 3, '91. —List of the Macrolepidoptera of Buffalo and vicinity, by Edw. P. Van Duzee.

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* Contains new species other than North American.

LIST OF LEPIDOPTERA OF BOREAL AMERICA, by John B. Smith, assisted by Henry Skinner, M.D., Geo. D. Hulst, Ph. D., C. H. Fernald, Ph. D., C. V. Riley, Ph. D. Philadelphia, Amer. Ent. Soc. 1891, 124 pp., 6020 species listed.

CONTRIBUTIONS TOWARDS A MONOGRAPH OF THE NOCTUIDÆ OF TEMPERATE NORTH AMERICA.—Revision of the species of Mamestra, by John B. Smith (from Proc. U. S. Nat. Mus. xiv, pp. 197–276, pl. viii–xi), Washington, 1891 (for new species, see *post*).

DESCRIPTIONS OF NEW CYNIPIDÆ IN THE COLLECTION OF THE ILLINOIS STATE LABORATORY OF NATURAL HISTORY, by C. P. Gillette, 1891; 1 plate (see *post*).

JOURNAL OF THE INSTITUTE OF JAMAICA, I, 1, Kingston, November, 1891.—Notes on the transformations of some Jamaica Lepidoptera, by T. D. A. Cockerell.

## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### COLEOPTERA.

*Calospasta histrionica* Horn, Proc. Amer. Philos. Soc. xxix, p. 100, San Diego, Cal. *C. morrisoni*, p. 102, So. California.

*Buprestis jimenezi* Duges, La Naturaleza, 2d series, II, p. 7, fig. 10, Jalapa.

*Melanophila nigra* Duges, l. c., p. 8, fig. 11, Tupataro (Guanajuato).

*Acmæodera moesta* Duges, l. c., p. 11, fig. 17, Guanajuato. *A. jucunda* p. 14, fig. 20, Acapulco. *A. sinaloensis*, p. 14, fig. 21, Motagé, Sinalva.

*Chrysobothris sobrina* Duges, l. c., p. 19, Guanajuato. *C. armata*, p. 19, fig. 29, Chiapas. *C. ignota*, p. 20, fig. 30, Tupataro, Guanajuato.

*Agrilus albofasciatus* Duges, l. c., p. 23, fig. 35, Guanajuato. *A. de Borrei*, p. 24, fig. 36, id. *A. Sallei*, p. 24, fig. 37, id. *A. metallescens*, p. 26, fig. 39, id. *A. parvus*, p. 26, fig. 60, id. *A. bimaculatus*. p. 26, fig. 40, id. *A. fossulatus*, p. 27, fig. 41, id. *A. sexmaculatus*, p. 27, fig. 42, id. *A. rubrovittatus*, p. 28, fig. 44, id. *A. caliginosus*, p. 29, fig. 46, Tupataro. *A. igneosignatus*, p. 29, fig. 47, id. *A. cupreomaculatus*, p. 30, fig. 48, id. *A. tupatarensis*, p. 31, fig. 59, id. *A. consobrinus*, p. 32, fig. 51, id. *A. Kerremansi*, p. 32, fig. 52, id. *A. purpureus*, p. 31, fig. 53, Guanajuato. *A. tarrascus*, p. 33, fig. 54, Michoacan. *A. alemani*, p. 33, fig. 55, Guanajuato. *A. nanus*, p. 33, fig. 56, Tupataro. *A. carmineus*, p. 34, fig. 57, id. *A. novus*, p. 34, fig. 58, id. *A. chlorus*, p. 35, fig. 59, id.

*Taphrocerus leoni* Duges, l. c., p. 35, fig. 61, Siloa, Guanajuato, Michoacan. *T. Kerremansi*, p. 35, fig. 62, Tupataro.

*Brachys chapusi* Duges, l. c., p. 36, fig. 63, Tupataro. *B. hexagonalis*, p. 36, fig. 64, Guanajuato.

*Lygirus Bryanti* Rivers, Proc. Cal. Acad. Sci. (2), III, p. 97, Lower California.

### LEPIDOPTERA.

*Carphoxera* n. gen. (Acidalinæ) Riley, Insect Life, iv, p. 112. *C. ptelearia*, p. 112.

*Mamestra determinata* Smith, Proc. U. S. Nat. Mus. xiv, p. 209, Col. *M. desperata*, p. 221, Me., N. H., Cal. *M. invalida*, p. 225, Cal. *M. u-scripta*, p. 228, Cal. *M. quadrata*, p. 248, Cal. *M. circumcincta*, p. 253, Cal. *M. longiclava*, p. 265, Col. *M. orbiculata*, p. 266, Col.

### HYMENOPTERA.

*Diastrophus scutellaris* Gillette, Bull. Ill. State Lab., N. H.?, p. 192, Ill. *Antistrophus silphii*, p. 192, Ill. *A. laciniatus*, p. 194, Ill. *A. rufus*, p. 195, Ill. *A. minor*, p. 196. *A. bicolor*, p. 197, Ill. *Acraspis compressus*, p. 197, Iowa. *Dryophanta lanata*, p. 198, Iowa. *Chilasphis ferrugineus*, p. 200, Iowa. *Aulax bicolor*, p. 201, Ill. *Synergus magnus*, p. 202, Mich. *S. villosus*, p. 202, Iowa. *Coptereucoila marginata*, p. 203, Ill. *Eucoila 7-spinosa*, p. 204, Ill. *Eucoilidea rufipes*, p. 205.

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## Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—A regular meeting was held in the Hall, Oct. 22, '91, Director Geo. H. Horn, M.D., presiding. Meeting called to order at 8.20 P.M. Members present: Martindale, Laurent, Ridings, Horn and Skinner. Associates: Fox and Liebeck. The Publication Committee reported favorably on papers No. 255 and 256, entitled "Notes on North American Tachinidæ, sens. str., with Descriptions of New Genera and Species," by C. H. Tyler Townsend, and "Random Studies in North American Coleoptera," by Geo. H. Horn, M.D. Paper 257 was presented for publication. Mr. Nathan Banks, of Washington, D. C., was duly elected an Associate of the Section. HENRY SKINNER, *Recorder*.

A regular meeting was held in the Hall, Nov. 25, 1891. The meeting was called to order at 8.20 P.M. In the absence of the Director, Mr. Blake presided. Members present: Messrs. Ridings, Laurent, Blake, Skinner and Welles. Associates: Calvert, Nell and Haimbach. The report of the Executive Committee was read and received. A number of American and European Odonata were presented by Mr. Calvert; also the Jamaican Odonata collected by Mr. Wm. J. Fox. Donations to the library were read. The Publication Committee reported favorably on a paper entitled "A Revision of the North American species of *Phlepsius*," by Edw. P. Van Duzee. Papers Nos. 258, 259 and 260, were presented for publication.

Mr. Calvert stated that in the Trans. Amer. Ent. Soc. xvii, p. 33, 1890, he had first described the supposed female of *Somatochlora Walshii* Scud., remarking then that it was much like the female of *S. forcipata* Scud., specimens of which he had not then seen. During the Summer of 1891 he had received the female and three males of *forcipata* from Prof. F. L. Harvey, at Orono, Me. A comparison of the females of *Walshii* and *forcipata* showed that the former was distinct. He knew of no evidence that the female *Walshii* was other than he had described it to be. Miss Wadsworth took a second male of *Walshii* at Manchester, Me., during the season of 1891; the first male which she had taken was now in Mr. Calvert's collection.

Dr. Skinner, Mr. Ridings and Mr. Laurent, were appointed a committee to make nominations for the coming year. Mr. Ridings moved that, when the Section adjourn, it adjourn to meet on the second Monday in December. HENRY SKINNER, *Recorder.*

A regular meeting was held in the Hall, Dec. 14, 1891, Director Geo. H. Horn, M.D., presided. Members present: Messrs. Horn, Welles, Martindale and Ridings. Associates: Calvert, Fox and Johnson. In the absence of the Recorder, owing to sickness, Mr. J. H. Ridings acted as such. The reports of the Treasurer and of the Joint Committee on ENTOMOLOGICAL NEWS were read. The committee on nominations named the following to serve as officers for the ensuing year: Director, Geo. H. Horn, M.D.; Vice-Director, Isaac C. Martindale; Recorder, Henry Skinner, M.D.; Treasurer, E. T. Cresson; Conservator, Henry Skinner, M.D.; Publication Committee: J. H. Ridings and Philip Laurent. On motion, the Recorder was directed to cast a ballot for the Section, and the above were declared elected. J. H. RIDINGS, *Recorder, pro tem.*

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, November 5, 1891.—Messrs. Theo. Gill and C. W. Stiles were elected active members of the Society, and Rev. C. J. S. Bethune, of Port Hope, Canada, and Prof. H. A. Morgan, of Baton Rouge, La., corresponding members.

Under short notes, etc., Mr. Schwarz exhibited some fine and complete examples of the galleries made by *Hylesinus sericeus* in the bark of *Abies menziesii* from the Wahsatch Mountains of Utah. These galleries closely resemble those made by the species of *Scolytus.*

The Secretary read a note by Mr. Wm. D. Richardson, of Fredericksburg, Va., corresponding member of the Society, on the life-history of *Loma Sayi.* The food-plant of this species is *Commolyna virginica;* the eggs are laid singly on the leaves, and the larvæ usually bore in the flower stalks, ejecting their fæces from the entrance hole of the burrow. Discussed by Mr. Schwarz.

Dr. Marx exhibited two remarkable spiders occurring in our fauna: (1) a representative of the South American genus *Nops* characterized by having but two eyes; (2) a puzzling species, the affinities of which he pointed out. It resembles an *Epeira*, but is altogether different in characters.

Mr. Schwarz read a paper on the time of flight in Scarabæid beetles, in which he related an observation made last June by Mr. H. C. Hubbard and himself concerning an undescribed species of *Lachnosterna* which flies before sunset in the alpine regions of Utah. He added remarks on the flying habits of other species of *Lachnosterna* and of Scarabæid beetles in general. It appears that in this family the unity in habit regarding the time of flight is generally maintained so far as genera are concerned, and that there are comparatively few exceptions to this rule.

Mr. Schwarz also exhibited a species of the family Monommidæ collected on Key West and at Biscayne Bay, Fla., and stated that after a careful study he has come to the conclusion that it is identical with *Aspathines ovatus* Champion recently described from Central America, which adds a new genus to our fauna. Discussed by Messrs. Marlatt, Howard, Mann and Schwarz.

Mr. Howard read a paper on the "Habits of Molittobia," suggested by Mr. Ashmead's communication at the proceeding meeting. He gave a comprehensive review of the literature, showing all of the hosts of this genus of parasites, proving that it is both parasitic and hyperparasitic. He added an account of the rearing of *M. pelopæi* Ashm. from dipterous puparia found in Pelopæus cells by Mr. A. N. Caudell. Discussed by Mr. Ashmead.

Mr. Banks read a paper entitled "A new genus of Phalangiidæ from North America," in which, under the name *Caddo* nov. gen. *agilis* n. sp., he described a peculiar Phalangid collected in woods near the seashore on Long Island. Figures representing the peculiar features of the insect were exhibited.

Dr. Marx gave some remarks on the geographical distribution of spiders, and stated that the Drassidæ, formerly supposed to be boreal in habitat, were now found to occur in the tropics in abundance, and that in fact we have not a single family that is entirely northern in range. In the Attidæ, however, certain genera may prove to be altogether boreal, but the family is not well worked up.

C. L. MARLATT,
*Recording Secretary.*

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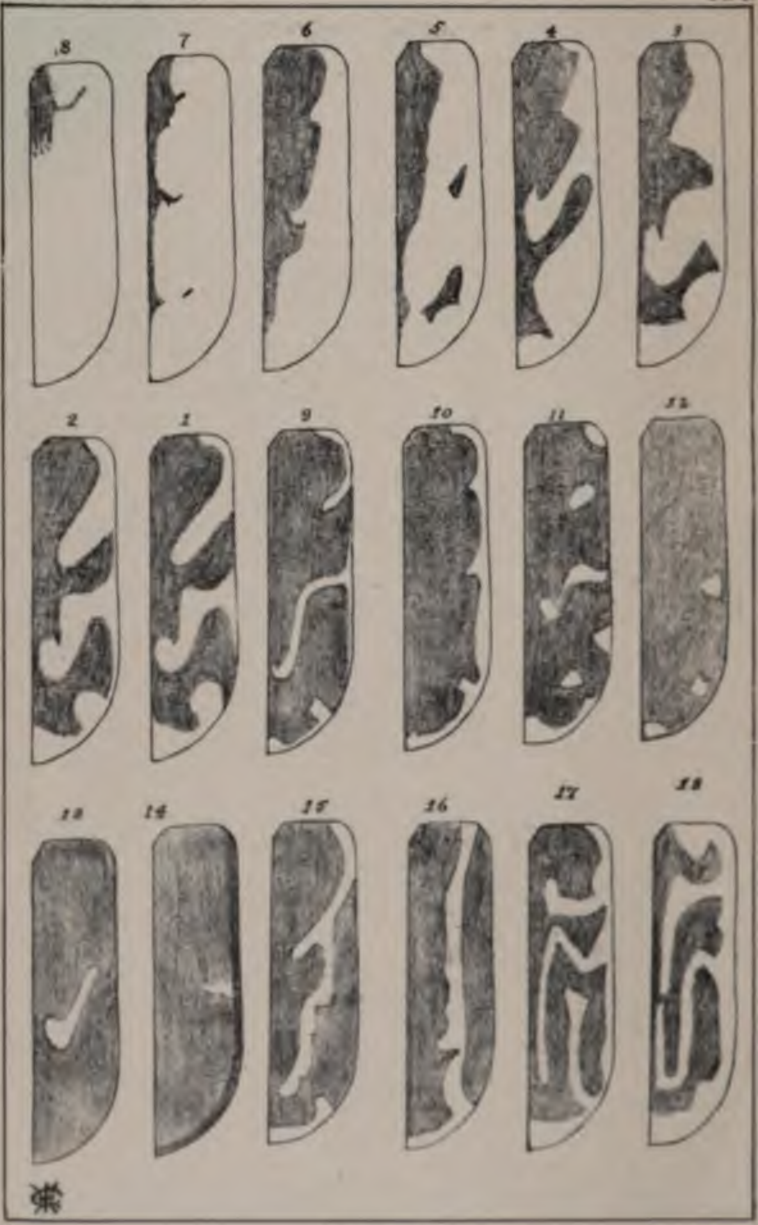
ENTOMOLOGICAL NEWS for December was mailed December 2, 1891.



CICINDELA.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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# Variations of Color-markings in Coleoptera.

By GEO. H. HORN, M.D.

Recently the subject of variation in coloration has been discussed before the Society of American Naturalists with the view of eliciting an expression of opinion as to whether color variation proceeded in a regular course, or was hap-hazard and accidental.

My observations have been that variation proceeds in regular lines, easily demonstrable with sufficient material, produced by external influences which are at present but partly understood.

There is probably no branch of zoology better fitted to illustrate this point than Entomology, from the abundance of species and the frequent occurrence of genera with large numbers of species in which a greater or less similarity of marking is observable.

As a beginning, in the illustration of this subject, it is best to select a genus well known to all collectors by the numbers of species possible in most collections. Cicindela has therefore been chosen.

Any one in glancing over his series will perceive that there is a great similarity of marking between many species. This similarity, which may be considered as the type of marking and illustrated by fig. 1 of the plate, representing *vulgaris* is the underlying pattern from which all the forms observed in our Cicindelæ have been derived.

Before going further it is well to present the following propositions that the argument and the illustrations may be understood.

1.—The *type* of marking is the same in all our species.

2.—Assuming a well marked species as a central type the markings vary,

- *a*, by a progressive spreading of the white.
- *b*, by a gradual thinning or absorption of the white.
- *c*, by a fragmentation of the markings.
- *d*, by linear supplementary extension.

3.—Many species are practically invariable. These fall in two series.

- *a*, those of the normal type, as *vulgaris*, *hirticollis* and *tenuisignata*.
- *b*, those in which some modification of the type has become permanent, probably through isolation, as *marginipennis*, *togata* and *lemniscata*.

4.—Those species which vary do so in one direction only. That is, supposing a species begins typically with markings similar to *vulgaris*, the variation may be either in the direction of thickening and increase of white as in *hyperborea*, *generosa* and others, or in the direction of thinning or fragmentation of the white with perhaps an entire loss of markings as in *hæmorrhagica*, *splendida*, or *obsoleta*.

The first two propositions must be considered as applying to the species of the genus collectively, the last two to the species separately.

The accompanying plate has been prepared to illustrate these propositions. It must, however, be understood that, in tracing the derivations from the typical, it is not possible to use one species as these modifications go on gradually through a number of species, one sometimes beginning where another ends.

In the plate fig. 1 represents *vulgaris*, which is a fairly typical species, following through *generosa* (2–3), *pamphila* (4), *hyperborea* var. (5), *togata* (6), *gratiosa* (7), *canosa* (8), we finally arrive at a perfectly white elytron as seen in some varieties of *dorsalis*.

Following in the other direction through *tenuisignata* (9), *marginipennis* (10), *Hentzii* (11), *sexguttata* (12), *hæmorrhagica* (13), and *splendida* var. (14), it will be observed that through a gradual thinning or absorption of the markings, or by their fragmentation and obliteration we arrive at the opposite result of elytra without any white markings whatever, as in many forms of *obsoleta*, *scutellaris*, *punctulata* and *hæmorrhagica*.

Those species which vary from the type in having the markings broken into spots, as 12-*guttata* or *Hentzii*, may lose the spots by a gradual decrease of size, so that they all seem to disappear nearly at the same time, or the spots may disappear successively, those on the disc being the first to go, while the marginal spots remain.

From our series it would be difficult to say which spot is the most persistent, but it is probably the apical lunule, as there are more with entirely dark elytra with slight traces of this spot than with any other, as shown in *abdominalis* and *punctulata*.

Forms like *lemniscata* (16) seem very far removed from the type, but many forms of *imperfecta* (15) show how the markings gradually leave the margin and tend by fusion to form a vitta at first somewhat oblique, but finally becoming nearly median.

The last two figures on the plate represent the markings of *Gabbii* (17) and *Saulcyi* (18), in which the ends of the bands or lunules are greatly prolonged. The latter form, which represents *dorsalis* as well, is but rarely seen so perfectly marked, the tendency being toward a greater extension of the white. The other species is scarcely variable, although equally a coast form.

Those species which retain a permanent divergence from the normal standard, such as *togata* (6) or *lemniscata* (16), are doubtless descendants from a normal type which has varied, and in which a variety has become isolated and perpetuated itself.

One result of an examination of my species with ideas here explained has been the discovery that *C. lunalonga* Schaupp is merely a variety of *pusilla* with markings a little better defined. Specimens before me establish the lead very distinctly.

In view of all the facts here presented the question might be asked, why do some species vary while others do not? While this matter is worthy of some thought, it is not possible to give a satisfactory answer. Some species doubtless vary from climatic causes. A notable instance will be seen in *hæmorrhagica*, which extends from San Diego and Yuma in California northward to the head-waters of the Yellowstone, passing through about all possible varieties of climate and habitat, from sea-coast to mountain. On the other hand *hirticollis* occurs from Hudson's Bay to Arizona without variation, and the specimens of *lepida* from the New Jersey shore are not separable from those found in Nebraska. It seems hardly possible to make any generalizations on the subject. Doubtless the coast species vary to a greater extent taking them collectively than do the inland species, but it is impossible to go further in speculation as too many exceptions arise on all sides.

The subject of variation might be considered at much greater length with profit and more fully illustrated, but the desire to bring the article within NEWS limits has caused me to be brief.

The figures have been drawn to illustrate markings only, and no regard has been had to the form of the elytra, which varies considerably, and would introduce an element not pertinent at this time.

Should the method of thought which gave rise to the preceding remarks produce in some others thoughts as to the possibilities of variation, not only in color, but almost equally in form and sculpture there would be less synonymy to be corrected and a more truly scientific basis established for species.

## EXPLANATION OF PLATE.

1.—*C. vulgaris*
2.—*C. generosa*
3.—*C. generosa*
4.—*C. pamphila*
5.—*C. limbata* ||
6.—*C. togata*
7.—*C. gratiosa*
8.—*C. canosa*
9.—*C. tenuisignata*
10.—*C. marginipennis*
11.—*C. Hentzii*
12.—*C. sexguttata*
13.—*C. hæmorrhagia*
14.—*C. splendida*
15.—*C. imperfecta*
16.—*C. lemniscata*
17.—*C. Gabbii*
18.—*C. Saulcyi*

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A writer in *Engineering* says "that in sinking plumb lines down shafts the accuracy of the work is often seriously impaired by spiders attaching their webs to the lines and drawing them toward the walls, often with sufficient tension to introduce material errors in the position of the plumb bobs."

# HYMENOPTEROLOGICAL NOTES.—III.

By Wm. J. Fox, Phila., Pa.

(Continued from page 11, vol. iii.)

**Calliopsis abdominalis** Cress.

A variety of this species occurs rather commonly in Gloucester County, N. J. It differs from typical *abdominalis* as follows : the thorax, with the exception of the tubercles and tegulæ, is entirely black; the abdomen has the base of the first segment above and base of the second only, reddish fulvous, the apical margins of segments 1—5, broadly testaceous; the male has the abdomen reddish fulvous, the segments each with a black fascia.

Numerous females and several males taken in Gloucester Co., N. J., from August 16th to September 9th, 1891.

**Epeolus pusillus** Cress.

*E. pusillus* Cr., Proc. Ent. Soc. Phila. vol. ii, p. 398, ♀.

The male of this insect, which has hitherto been undescribed, differs from the female by its smaller size; the clypeus being covered with pale pubescence; the eyes more strongly converging towards the mouth; the antennæ, first three joints excepted, testaceous beneath; tip of the abdomen reddish; nervures and stigma testaceous; the antennæ are shorter and stouter. Length 6 mm.

A male and female of this species taken in Gloucester County, N. J., August 16th and September 5th.

**Epeolus compactus** Cress.

This species has only been recorded from Texas, Colorado, Nevada, California. I have a specimen taken in Camden County, N. J., during May.

**Melissodes fimbriata** Cress.

A male specimen of this insect was taken at Cape May, N. J., on June 14th. It has only been recorded from Texas.

**Zethus Slossonæ** n. sp.

♀.—Black, a spot on each side of the clypeus, two transverse elongate spots behind the base of the antennæ, a dot in the eye emargination, posterior orbits, line on the collar, much narrowed and slightly interrupted medially, a large spot at the top of the mesopleuræ, two small spots on the scutellum and postscutellum, two large ones on the posterior face of the metathorax, an irregular line on the apical margin of the petiole, which extends up a little way along the sides, line on anterior femora behind, and the middle tibiæ, more or less, all yellow; the scape and following two antennal joints, the mandibles, except apex, the tegulæ, the legs, except the posterior femora medially and the coxæ, reddish brown; clypeus rounded laterally, with sparse, shallow, punctures, its anterior margin armed with three widely separated teeth, the middle tooth largest; just above the antennæ there is a strong, transverse ridge; the antennæ are situated just beneath each end of this ridge, and are therefore widely separated; front with very large, deep, in some places confluent punctures, the punctures becoming less strong on the vertex and are sparse and shallow on the cheeks. Thorax punctured as on the front, on the sides and beneath with silvery-sericeous pile; scutellum with an impressed line, the punctures sparse; postscutellum with the posterior margin produced into a strong angle; metathorax subopaque, with a medial impressed line, with a few oblique, widely separated striations towards the sides, the metapleuræ with indistinct, shallow punctures; wings fuscous, with a violaceous reflection, which is especially strong on the apical portion, brownish along the costa, stigma yellowish, nervures black, second submarginal cell very narrow at the top, the third submarginal cell broader above than beneath; legs clothed with silvery pile. Abdomen clothed with sericeous pile, the petiole much swollen medially, and is contracted before the apex, a little broader than high, and with large, sparse, punctures above, the pedicle of the second segment takes up less than a quarter of the segment, the base of the pedicle black; the remainder of the abdomen claret-brown, shining, smooth above, beneath with large, sparse punctures.

♂.—Differs from the female as follows: the clypeus is entirely yellow, the medial tooth not so large; the third antennal joint black, and is more than a third longer than the fourth, joints 10–12 reddish, the hook black; the eye emargination is narrower; the medial impressed line of the scutellum is stronger; the legs without any trace of yellow; the second submarginal cell is broader above than in the female. Length ♀♂ 16 mm.

Three specimens, one female, two males. Collected by Mrs. Annie Trumbull Slosson, near Punta Gorda, So. Florida. It is most closely allied to *Z. azteca* S., from which it differs by the transverse ridge behind the antennæ. It differs from *Z. Poeyi* S., from Cuba, by the toothed clypeus and the shorter pedicle of the second abdominal segment.

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## Collecting Butterflies in the Yosemite Valley.

By HARRISON G. DYAR.

My wife and I spent four months of last year in the Yosemite Valley, Cal., to enjoy the grand scenery and the pure air of the Sierra Nevada and make collections of the Lepidoptera of that region, and it has occurred to me that some notes of our experiences might interest the readers of ENTOMOLOGICAL NEWS.

The valley, as may be seen from a map, is situated on the west slope of the Sierra Nevada, and through it the north branch of the Merced River flows. The general course of the river is southwesterly at this point and it plunges over two falls called the Nevada and Vernal to a depth of about 3000 feet below the general level of the surrounding country and flows, with but slight descent, for a distance of five miles between nearly vertical walls which are, on an average, a mile apart. This cañon is the Yosemite Valley, and its level floor would be covered with fine trees and shrubs were it not for the work which is being done by those in charge of the valley, who, I am sorry to say, have already succeeded in spoiling the once picturesque beauty of Mirror Lake by means of a dam and other improvements (?).

Lepidoptera were abundant during the first part of our stay, more especially the butterflies; we found but few moths. Later in the season they became much less common, and it was more and more difficult to obtain larvæ as nearly all the small plants died by reason of the dry season which set in soon after we arrived. We collected forty-nine species of butterflies, but not all were found on the floor of the valley. *Papilio rutulus* and *P. eurymedon* were common, but *P. indra*, which is a true mountain species, and occurred about the edge of the valley at an altitude of 7000 feet above the sea, was seldom seen there, although a few examples wandered down. *Neophasia menapia* was common towards the end of Summer flying slowly about the tops of the *Pinus ponderosa*, or alighting on flowers. *Pieris beckerii* and *P. sisymbrii* were found in considerable abundance on the summit of Cloud's Rest, a peak 10,000 feet high, overlooking the valley, but I did not see them elsewhere. Several species of *Anthocharis* occurred, but not in the valley proper. *A. lanceolata* was found on the talus at different altitudes, but they did not appear in the valley, and it is surprising how closely they confined themselves to the rocks, as if aware that the marbled colors of the lower surface of their wings were only fitted to harmonize with the gray granite of the broken rocks. The ubiquitous *Colias eurytheme* was to be seen all Summer, and I captured one male specimen of *C. behrii*, to which I shall again refer. *Danais archippus* was not uncommon, and two eggs of this species were found on a wild gooseberry bush, where they had been laid apparently by accident (there was no milkweed near). The larvæ that hatched from them refused gooseberry, and would certainly have died had I not supplied them with their ancestral food. Of *Argynnis*, three species occurred, *A. epithore* in the Spring, followed by what is probably *A. monticola*, though there seemed to be two very closely allied forms, perhaps only varieties, in one of which the marginal spots on the lower side of hind wings were narrower than in the other and sometimes slightly touched with silver. Both these forms were taken *in coitu* and always with a mate of the same form. *A. leto* appeared still later, the first male being seen July 10th, and first female July 21st.

Of the other species captured, I will notice only the most interesting. *Lemonias virgulti* was common in the Summer on flowers and sage brush bushes, more especially on the talus around the valley and above Vernal Fall.

*Thecla grunus* occurred in swarms around the live oak trees (*Quercus chrysolepis*) first appearing about July 1st and continuing all Summer. The full grown larvæ were found in abundance on young shoots of this tree about the first of June. *Pyrgus ericetorum* was seen on only one day when we captured several examples feeding on the flowers of the Pussy's Paws (*Spraguea umbellata*), but saw none afterward, though we went to the same place the next day.

About the middle of September, after nearly all my larvæ had stopped feeding, we took a trip to the high Sierras to climb Mt. Lyell, a peak 13,000 feet high. We left Yosemite on hore-back with Mr. J. B. Lembert, as guide, who owned a small farm at Soda Springs, high in the mountains, near the head of the Tuolumne River before the place was included in the National Park. On September 20th we made the ascent of the peak, and when about a quarter of the way up on a spur of the mountain overlooking the end of the glacier, a specimen of *Colias behrii* was started up which I succeeded in capturing. No more were seen that day as the weather soon became threatening, and by the time we reached the top of the glacier, the clouds had begun to float in over the peaks. On another day, September 22d, we went to some mountain meadows, 10,000 feet high, where Mr. Lembert had formerly seen some of the "little green butterflies" (*C. behrii*), but met with no success, and were obliged to return almost immediately in a dense snow storm.

When we returned to the valley after a day's ride from Soda

Springs, I found that most of the larvæ, which had not ceased feeding when I left and which I had tied out in bags on their food-plants, had been cut off and destroyed by a crazy Indian, called "Loco" by the children of the valley. This made a rather disastrous ending to an otherwise quite successful collecting season.

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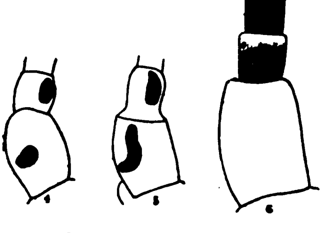
## ON THE SPECIES OF ŒCANTHUS Serv.

By CHAS. A. HART, Champaign, Ill.

Although the snowy, or tree cricket is commonly referred to as *Œcanthus niveus*, there are three or four species quite common and widely distributed, one of which, *Œ. fasciatus*, is in this State (Illinois) more abundant than *niveus*. I have just had occasion to examine a large series of specimens in the collection of the Illinois State Laboratory of Natural History including all the species yet recorded from Illinois. After a fairly satisfactory assortment of the specimens with the aid of the characters indicated by Prof. Jerome McNeill in "Psyche," vol. vi, p. 6, I noted that the coloration of the antennæ in each species had a perfectly distinct and invariable pattern of its own in all specimens examined. This character is not affected by sex, and seems to be the most reliable and ready means of separating the species. Some of these changes of pattern were noticed by Dr. Fitch in his description of *Œcanthus niveus* (Third Report on Insects of N. Y. p. 95) as characterizing varieties of that species, but the specific identity of these forms seems now well established.



[EXPLANATION OF CUT.]

Basal joints of antennæ of *Œcanthus*, under surface. (The difference in the sutures is due to the changing appearance of the sutural membrane in different positions of the antennæ) 1 and 2, *Œ. fasciatus*; 3, *Œ. bipunctatus*; 4, *Œ. niveus*; 5, *Œ. angustipennis*; 6, *Œ. latipennis*.

*Œ. bipunctatus* De G. has the apex of the scape prolonged beneath, forming an acute blackish tooth. The fore wings are conjointly marked with a fuscous spot near middle, and a large basal spot.

*Œ. fasciatus* Fitch, presents an extraordinary range in depth olor, thout, however, any actual change of pattern. In palest specimens, approaching *niveus* in color, the scape has on its under surface an inner black longitudinal line, straight, or with the basal end turned slightly outward. Exterior to this and near the apex of the joint is a black dot. The second joint has a similar pattern. The flagellum is luteous or olivaceous, never annulated with darker wings exteriorly as in *angustipennis* and *niveus*, though the sutures are often slightly paler. The legs vary correspondingly from pale greenish to black. As the color deepens, the outer dot in the antennæ coalesces with the end of the line, forming Dr. Fitch's var. *b*. The lines also thicken, the dot enlarges, the black extends around the apex, and from the dot toward the base, until the antenna becomes entirely black. This species has strong hind tibial spines, the last joint of the maxillary palpus is clavate, and the fore wings in the male are wider than in *angustipennis*.

In *Œ. angustipennis* Fitch, the scape has on its under side a longitudinal black vitta, the basal end of which curves distinctly inward; the second joint has a black oval spot beneath. The flagellum is pale, the outer part annulated with brownish at the tips of alternate joints. This species is also known by the very narrow fore wings of the male and the weak spines of the hind tibia.

Our palest species is *niveus* De G., which is almost colorless, but in all specimens seen possesses a nearly circular black spot on the under side of the first and second joints. The flagellum is pale, usually annulated as in *angustipennis*. The tibial spurs are as in *fasciatus*, and the fore wings are moderately broad.

Our largest species, *Œ. latipennis* Riley, lacks any distinct markings on the first two joints. The flagellum is decidedly suffused with reddish brown basally, but the outer portion is not annulate with darker. The male has the fore wings slightly wider proportionally than in *niveus*.

*Fasciatus* was very abundant this fall along the roadsides; *niveus* and *angustipennis* were taken this Summer at sugar in the evenings; our specimens of *latipennis* are all from the southern part of the State.

"I wish I was human," said the centipede. "It would ruin you," returned the cricket; "just think of having to buy shoes for yourself."—*New York Herald*.

# ELEMENTARY ENTOMOLOGY.

## LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

All the Heterocera are commonly termed moths, and moths as distinguished from butterflies rarely have a distinctly clubbed antennæ, and do not usually carry the wings upright, the upper surfaces opposed, when at rest. In some of our Geometridæ the wings are sometimes carried butterfly fashion, but here there is no trace of a club to the antennæ, and where the antennæ might be called clavate, the posture of the wings is distinctly decumbent. The term "heterocera" means variously horned, and, indeed, all kinds of variation in antennal structure is found in the series, save that in American forms there is no distinctly clavate type represented. The terms expressive of antennal modifications are best explained when the necessity for their use arises.

Perhaps the most important character for the higher divisions is found in the venation, and under our present system a knowledge of this is absolutely essential to a proper understanding of relationships, or to enable an insect to be referred to its proper family. Experience brings a certain knowledge of superficial appearances which serves to place most specimens, but even experienced lepidopterists have been not infrequently misled by trusting too much to such appearances. Wings can be prepared for the study of venation in various ways. On larger moths a deft operator can remove enough of the scales with a camel's-hair brush to enable him to make out the course of all veins readily. Smaller moths, where the wings are for temporary use only, can be soaked for a few minutes in carbolic acid, which will render all but the veins transparent. The wings may be afterward thrown away or mounted in balsam without further preparation. Where permanent specimens are desired the wings are first placed in alcohol a few moments to extract grease, then placed in a saturated solution of chloride of lime until all color disappears. They are then washed in clean water, dried, and are ready to mount on cards with gum, on slides with balsam, or in any other way fancy dictates. Where rapid bleaching is desired, a drop or two of hydrochloric acid to the chloride of lime solution will liberate chlorine gas and cause an almost instantaneous bleaching. It will also cause an odor that will drive well disposed persons out of the room, and will further, unless watched carefully, eat into the membrane of the more delicate wings. My practice, when I want rapid results, is to get the wings into the lime solution, set the dish on the window-sill *outside*, drop in my acid, and close the window until chemical action ceases. The wings are then ready for study. It is by no means necessary to go through this process with every new form. When the general course of the veins is known a few scales removed on the underside, at the right spot, determines the matter. Where a wing is mounted in balsam after bleaching, great care must be exercised lest weak veins be rendered so transparent that they are overlooked, and folds must not be mistaken for veins. A fold is often much more distinct than a vein, but looks solid, with irregular edges, while a true vein has clean cut edges and is a tube. For forty years even the best European students had mistaken a fold for a vein in some *Zygænidæ* until I pointed out the error, and on the other hand I was caught napping and failed to see a true vein in *Cerathosia* because made too transparent in balsam.

If I have been somewhat diffuse on the subject of preparing wings for study, it is only because in venation we have the key to the present classification, and without it determination of family is guess work, more or less correct according to the experience of the guesser.

In a normal heterogeneous wing the primaries have 12, rarely 13, the secondaries 8 veins. On the secondaries the number may be increased to twelve or reduced to four, and it is in the secondaries that we find some of our most useful characters.

In the next paper the usual type of venation will be figured and described.

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## Some of the Insects collected at Jamesburg, N. J., July 4, 1891.

### HYMENOPTERA.

By W. J. Fox.

(The rarer species.)

Elis 4-notata
Pompilus fuscipennis
Pompilus virginicus
Trypoxylon tridentatum
Odynerus bireniinaculatus

## DIPTERA.

By C. W. Johnson.

Pachyrrhina incurva
Tipula fasciata
Chrysops vittatus
" univittatus
" callidus
" niger
" fallax
" flavidus
" obsoletus
Therioplectes trispilus
Leptogaster favillaceus
Stichopogon trifasciata
Dasyllis tergissa
" flavicollis
Erax furax
Proctacanthus rufus
Bombylius atriceps
" sp.
Anthrax lateralis
Argyramæba analis
Geron macropterus
Psilocephala albifrons
" pictipennis
Psilopus scobinator
" patibulatus
Syrphus americana
Sphærophoria cylindrica
Eristalis dimidiata
Mesograpta geminata
Platychirus hypoboreus
Xylota anthereas
Rivellia conjuncta
Tephronota humilis
Colobata antennipennis
Lauxania obscura
Trypeta bella
Sapromyza compedita

## COLEOPTERA.

By Philip Laurent.

(Those species marked † were quite common.)

Cicindela punctulata†
Gyrinus lugens? †
Dineutes vittatus†
Coccinella 9-notata†
Scymnus terminatus
Melanotus cribulosus?
Limonius basillaris
Agrilus ruficollis
Brachys ærosa
Lucidota atra? †
Pyropyga nigricans †
" decipiens
Photuris pennsylvanica
Chauliognathus marginatus†
Podabrus rugulosus†
Telephorus scitulus†
Collops 4-maculata
Onthophagus hecate†
Serica trociformis
Anomala lucicola†
" oblivia
Strigoderma pygmæa
Chlamys polycocca
Cryptocephalus venustus†
" congestus
Pachybrachys binotatus
" atomarius
Chrysochus auratus†

Paria 4-notata
" aterrima
Graphops pubescens
Colaspis flavida
" costipennis (rare)
Diabrotica 12-punctata†
Haltica foliacea?
Dibolia ærea
Odontota dorsalis
Cistela sericea
Mordella scutellaris†
Macrobasis unicolor†
Eugnamptus angustatus†
Pterocolus ovatus
Læmosaccus plagiatus
Centrinus scutellum-album
Eurymycter fasciatus (rare)

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items rs, likely to interest its readers, from any source. The author's name will be given case for the information of cataloguers and bibliographers.]**

**o Contributors.—All contributions will be considered and passed upon at our liest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.**

ON a Continental forty-five dollar bill, issued on the 14th of January, 1779, is represented an apiary in which two beehives are visible, and bees are seen swarming about. The motto is "*Sic floret Respublica*—thus flourishes the Republic." It conveys the simple lesson that by industry and frugality the Republic would prosper.--*Harper's Monthly.*

Dr. GEO. D. HULST has donated his collection of Lepidoptera to Rutgers College. He will retain for the present the families in which he is working, but everything else goes to the college. The collection is one of the richest in *Catocala*, and contains a very large number of types in the Geometridæ and Pyralidina. There are nearly 2500 named species and much undetermined material, some yet undescribed.—J. B. SMITH.

FOOD-PLANTS OF LIMACODIDÆ.—So far as I have observed, the larvæ of moths of this family feed on the leaves of nearly all, if not all, deciduous trees and shrubs, and readily change from one food-plant to another. This is in accord with the observations of Dr. Kunze (ENT. NEWS, vol. ii, p. 208) on *Parasa chloris*, as it will be noticed that all the plants mentioned are deciduous trees, except the Bayberry (*Myrica cerifera*), which is a shrub.—HARRISON G. DYAR.

"I HAVE never looked at this lovely thing (*Papilio marchandii*) with its delicate form and brilliant hue, without my thoughts reverting to the long past builders of the temples and altars of Palenque and Copan; the butterfly flitted through the tropical groves in their day, as now, but the inhabitants of the old dead cities have passed away, their names, their history unknown! Birds, reptiles and insects now alone tenant the forest where once stood the populous cities, the kings and priests of which, with their slaves, sycophants, long ages ago have gone to rest; naught remains of their past greatness but the moss-coated and time-worn ruins of altar and idol, and the frail, golden butterfly hovers, suspended in mid-air, over the monster face of some fallen dagon, which far back beyond even 'the night of time,' received its meed of human sacrifice; in imagination, we can see the temples restored, the long train of devotees, all the paraphernalia of pagan worship, we can hear the sound of music, the shrieks of the agonized prisoner about to be offered as a propitiation to some monstrous conception of barbaric superstition; but all now is hushed; priest, cacique and victim alike, are gone, fallen are the idols, giant trees grasp with their roots the ruins of the temples, and creeping vines and gorgeous flowers mingle with the sculpture of the marvelous shrines; scarce a sound is heard save the rustling of some snake gliding stealthily to its hole, or shimmering lizard running over leaf or twig." (Lepidoptera, Rhopaloceres and Heteroceres, H. STRECKER.)

LIST OF DRAGONFLIES taken at Lake Quinsigamond, Worcester, Mass., during the seasons of '89 and '90.

1. *Calopteryx æquabilis* Say
2. *Argia putrida* Hag.
3. *Ischnura verticalis* Say
4. *Enallagma Hageni* Walsh
5. " *civile* Hag.
6. " *signatum* Hag.
7. *Nehalennia irene* Hag.
8. *Lestes hamata* (Hag. 1862).
9. " *rectangularis* Say
10. " *vigilax* Hag.
11. " *unguiculata* Hag.
12. " *forcipata* Ramb.
13. *Anax junius* Dru.
14. *Æschna janata* Say
15. " *constricta* Say
16. " *verticalis* Hag.
17. " *heros* Fab.
18. *Neuraschna vinosa* Say
19. *Gomphus exilis* Selys
20. " *spinosus* Selys
21. *Cordulegaster maculatus* Selys
22. *Macromia illinoensis* Walsh
23. *Cordulia semiaquea* Burm.
24. " *princeps* Hag.
25. " *cynosura* Say
26. *Libellula exusta* Say
27. " *quadrimaculata* L.
28. " *pulchella* Dru.
29. " *quadrupla* Say
30. " *incesta* Hag.
31. *Celithemis eponina* Dru.
32. " *elisa* Hag.
33. *Plathemis trimaculata* De Geer
34. *Mesothemis simplicicollis* Say
35. " *longipennis* Burm.
36. *Leucorhinia proxima* Calv.
37. *Diplax costifera* Uhler
38. " *rubicundula* Say
39. " *semicincta* Say
40. *Perithemis domitia* Dru.

They were identified by Miss Wadsworth, of Hallowell.

E. F. HITCHINGS, Bucksport, Me.

THE most beautiful as well as pleasing emblem among the Egyptians was exhibited under the character of *Psyche*—the Soul. This was originally no other than a butterfly, but it afterwards was represented as a lovely female child with the beautiful wings of that insect. The butterfly, after its first and second stages as an egg and larva, lies for a season in a manner dead, and is enclosed in a sort of coffin. In this state it remains a shorter or longer period; but at last bursting its bonds, it comes out with new life, and in the most beautiful attire. The Egyptians thought this a very proper picture of the soul of man, and of the immortality to which it aspired. But they made it more particularly an emblem of Osiris, who having been confined in an oak or coffin, and in a state of death, at last quitted his prison and enjoyed a renewal of life. This symbol passed over to the Greeks and Romans, who also considered the butterfly as the symbol of Zephyr.—*Cowan, Curious Facts.*

WINTER INSECTS.—On a Winter day, when the sere landscape is enlivened by an unclouded sun, let his genial rays tempt the reader to a stroll in the Pennsylvania woods. He may be cheered by no bird song; no plants except a few evergreen leaves may brighten his path, but insect life will be there to welcome him.

Those merriest of dancers, the gnats, come forth from the moist earth at the call of the sun. Mosquito-like, they have passed their immature life in the water, and the cases of the little wrigglers are ready to burst open and liberate the winged insects whenever the sun peeps forth from the clouds. This may occur on a sunny day, even when the temperature of the air is far below the freezing point.

Arctic explorers tell us that as far North as they have gone, away up in the icy fields of Greenland, even where there is no vegetation, these gnats, or species so closely resembling them that only naturalists can detect the difference, are found dancing on wing in the sunlight or clinging to the sides of boats and sledges.

As we continue our walk through the Winter woods we turn over a log and find crawling about beneath it small, black beetles, a few tough-skinned, hard-headed grubs, and now and then a spider. If the sun shines brightly, even though snow may lie deep on the ground, wasps will be tempted forth from crevices of bark in which they have lain dormant with the cold, and after becoming thoroughly warmed they will take wing through the woods.

A butterfly known as the Mourning Cloak, richly dressed in brown and blue velvet, bordered with gold, comes forth from its snug retreat when the Winter sun is bright and wings his way through the woods as gayly as he would in mid-summer. His hiding-place has been in the wind-cracks of an old chestnut tree or a bunch of clinging leaves. He may be seen flitting about even when the snow lies several inches deep. Far off in the Rocky Mountains and among the Alps of Switzerland butterflies of various species may often be seen flying over the snow and glacier ice.

If we displace the rustling leaves that cover the ground in the woods we notice now and then a large black beetle running quickly from under our feet. If snow is on the ground we shall not see him, but in its absence we shall find him even on the coldest day. He evidently knows where to hide himself when the unwelcome snow and ice appear.

This torpor of insects is a very different condition from the hibernation of warm-blooded animals, such as the bear and the marmot. In the latter a slow and feeble circulation and respiration are kept up, and the creature lives on the fat that had been stored up in its body before the Winter sleep came on.

Different insects are affected by cold in very different degrees. Many, like the common house-fly, become torpid before the temperature falls to the freezing point. Long before frost comes they succumb to the moderate cold of autumn. There is no doubt that severely cold Winters are attended with great loss of insect life, which in a milder season would have survived.—S. F. A. in *Philadelphia Times*.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Address all packages to ENTOMOLOGICAL NEWS, Academy Natura Sciences, Logan Square, Philadelphia, Pa.**

Insects have been named for W. W. Newcomb, Henry C. Denslow, Geo. Miller, D. S. Harris, W. M. Hill, J. H. Talmage, J. H. Bomberger.

### ON SENDING INSECTS BY MAIL OR EXPRESS.

We receive so many insects in a broken condition, especially those sent to the NEWS for determination, that we think a few words on packing and transportation will be appropriate. We also think we should receive some reward for our trouble in naming and not be compelled to drop the specimens in the waste basket. **Never send pinned or spread specimens by mail in a single box without an outer cover.** Have the box which is to contain your specimens as light in weight as is consistent with strength; a good plan is to glue little square uprights in each corner of the box and it will then stand much pressure. Have the bottom of the box lined with quarter inch cork and drive the pins well in; should one heavy specimen loosen it will ruin all the rest. Have the size of box proportionate to the number of your specimens, and pin them in as closely as you can without injury. This box should then be placed in a larger one and the space between the two filled with some springy material such as hay, cotton, excelsior packing, etc., **loosely packed** in. **Don't** use an outer box **without having sufficient space between it and the inner,** as it is a waste of time and money as it will be useless. **Don't** pack the springy material so tightly between the two that it is useless as a preventive of jarring. Don't have them come in contact on one side or on the bottom. If the specimens are many and the box large, send by **express.** Small packages may be sent in comparative safety by packing the box containing your specimens in a large amount of excelsior cotton, etc., loosely around the box and then making into a bundle by enclosing the whole with hardware paper or other strong and heavy paper; in this way the postage on the heavy outer box is saved. It is a good plan to always put a nice layer of raw cotton over the cork, but never put this over the top of the specimens. When sending Coleoptera with heavy bodies, or moths, always secure the body by a wisp of cotton, which should be put on as follows: Take a wisp the required length and tease it out about one-half inch in width; run the pin through on end and give it a couple turns around the pin so that it holds tightly and lies close to the place where the pin issues from the thorax, then bring it around the end of the abdomen and then fasten to the pin above by a couple of turns. If the bodies are very large, as in the Sphinges, a pin should be placed on either side to prevent them swinging around on the pin. Always remember if one becomes loose it ruins many, and that "one fine, faultless specimen is worth no end of trash." Neuroptera Odonata should always have a **bristle passed through the abdomen** into the thorax when fresh, otherwise they are almost always broken off in transportation. Always put your name and full address on the box.

## Entomological Literature.

HARDWICKE'S SCIENCE GOSSIP (London), December, 1891.—An introduction to the study of British Diptera, E. Brunetti, figs. European butterflies, R. B. P.

ANNALS AND MAGAZINE OF NATURAL HISTORY (London), December, 1891.—On the structure of the ocelli of Lithobius, V. Willem.

MONOGRAPH OF ORIENTAL CICADIDÆ by W. L. Distant. Part iv, pp. 73-96, pls. 7-9.* London, Calcutta, Berlin, September, 1891.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Nov. 7, '91. —Causeries Odonatologiques, No. 5: Two new groups of Agrionina from Madagascar, *Nesolestes* and *Nesocnemis*,* E. de Selys Longchamps. Note on *Amara convexior* Steph. or *continua* Thom., A. P. de Borre.

CANADIAN ENTOMOLOGIST, December, 1891.—List of writings of the late Henry Edwards, W. Beutenmüller. [This list does not contain Mr. Edwards' paper "Inguromorpha Slossonii Hy. Edw.," published in ENT. NEWS, vol. ii, pp. 71-72, April, 1891, and which was probably the last he ever wrote.] A catalogue of the Thysanoura of North America, A.

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* Contains new species other than North American.

D. Macgillivray. The genus *Packardia* G. & R., H. G. Dyar. Descriptions of some butterfly larvæ from Yosemite—iv., id. On *Catocala flebilis* and *C. fratercula*, A. R. Grote. On some British Columbia Coleoptera, Rev. J. H. Keen. Notes.

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xvii, 23, December, 1891.—On the capture and preparation of Gallflies, E. H. Ruebsaamen. On a *Syrphus* developing on *Cirsium*,* C. Verhoeff. *Rhizotrogus ater* and *fuscus*, a reply to Dr. Kraatz, E. Brenske. No. 24, December. On German Psocidæ, H. Tetens.

MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT. viii, 8, Schaffhausen, December, 1891.—Some new Orthoptera,* A. Pictet and H. de Saussure; *Pharmacus* n. gen.; two new species of *Gryllacris* are described from "America!" Description of some new Snout Beetles,* Dr. G. Stierlin. Description of an unpublished species of the genus *Anaspis* Geoffroy,* M. Guillebeau. Coleoptera Helvetiæ, pp. 225-256, Dr. G. Stierlin.

THE ENTOMOLOGIST (London), November, 1891.—*Tortrix donelana* Carpenter, R. South. The Diamond-back moth (*Plutella cruciferarum*), J. Arkle. Captures at the electric light, R. Adkin. Notes on the synonymy of noctuid moths, A. G. Butler (includes some N. American species). Coleoptera collected by Mr. Pratt on the upper Yang-tsze-kiang, and on the borders of Tibet, 2d notice,* H. W. Bates.—December, 1891. Early stages of *Argyrolepia maritimana* Guen., G. Elisha, 1 pl. Insect pigments, T. D. A. Cockerell. Rearing *Limenitis sibylla* and *Pararge egeria*, J. H. Fowler. Cure for the ravages of the larvæ of *Nematus ribesii* and *Abraxas grossulariata*, J. N. Still. Reunion between the same moths, R. Adkin.—January, 1892. Mr. Butler's notes on synonymy of North American Noctuidæ, J. B. Smith. Local British lists, notes and captures.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE (London), November, '91.—Entomological notes from Port Darwin, J. J. Walker. Note on three Australian Carabidæ,* H. W. Bates; *Eurylychnus* n. g. Sexual characters in the palpi of *Mordellistena abdominalis* F., G. C. Champion. Notes on the British species of *Haltica*, J. Edwards. Further remarks on the genus *Eugaster* Serville,* W. F. Kirby. Life-history of *Hypsipetes ruberata*, N. M. Richardson. Addition to the list of British Hemiptera, E. Saunders. An earlier name for *Tinagma betulæ*, H. T. Stainton. *Micropteryx caledoniella*: another new species, probably from birch,* A. F. Griffith. Notes on *Eupœcilia sodaliana* Haw. (*amandana* H. S.), with description of the larva, W. G. Sheldon. Some new, etc., Lepidoptera from Chili, W. Bartlett-Calvert.—December, 1891. Life-history of *Plutella annulatella* Curt., N. M. Richardson. A new genus of Histeridæ, G. Lewis; *Epiechinus*. An Asiatic *Psychopsis* (*Ps. birmana* n. sp.),* R. McLachlan. A new species of *Aleurodes*,* J. W. Douglas, figs. Anno-d list of British Tachinidæ, R. H. Meade. Change of habit induced ocal conditions, R. McLachlan.—January, 1892. Stylopized bees, R. L. Perkins. Neuroptera observed in the Channel Islands in Septem- r, 1891, R. McLachlan. Two new British Hemiptera, E. Saunders. On a toad killed by the larvæ of blow-flies, L. G. Guthrie. Observations on Coccidæ, A. C. F. Morgan. Double-broodedness: whether influenced by the state of the food-plant?, F. Merrifield. Local British lists, notes and captures.

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* Contains new species other than North American.

Anales de la Sociedad Cientifica Argentina, xxxii, 5, Buenos Aires, November, 1891.—New Hymenoptera of the Argentine and Uruguayan faunas,* Dr. C. Berg (continued); *Procleticus*, *Lobepomis* n. gen. Argentine Dipterology (Syrphidæ),* F. L. Arribalzaga (continued).

Lepidoptera Indica by F. Moore. Part viii, London, 1891, pp. 153-176, pls. 57-64.

Zoologischer Anzeiger (Leipzig), Dec. 14, 1891.—Remarkable development of *Lucilia sylvarum* Meig., G. Duncker.—December 28th. The reproduction of *Peripatus Leuckartii* Sanger, A. Dendy. On the embryology of insects, N. Cholodkovsky. Observations on the successive coloring, etc., of the pupal wing cases of *Vanessa urticæ* and *Io*, Dr. F. Urech.

Die Tagfalter-Rhopalocera, von Georg Semper (Reisen im Archipel der Philippinen von Dr. C. Semper. Zweiter Theil. Wissenschaftliche Resultate, v, 6) Wiesbaden, 1891,* pp. 239-270, pls. 39-46.

Monograph of the British Cicadæ or Tettigidæ, G. B. Buckton. Part vii,* London and New York, Macmillan & Co., July, 1891. Vol. ii, pp. 97-128, pls. 59-68.

Die Spinnen Amerikas—Brasilianische Spinnen von Graf. E. Keyserling nach dessen Tode herausgegeben von Dr. George Marx. Dritter Band. Nürnberg, 1891. Verlag von Bauer & Raspe (Emil Kuester), 278 pp., 10 pls. Ten new genera and many new species are described in this volume which treats of the Territelariæ.

Lehrbuch der Vergleichenden Entwicklungsgeschichte der Wirbellosen Thiere von Dr. E. Korschelt und Dr. K. Heider. Specieller Theil. Zweites Heft. Mit 315 Abbildungen im text, Jena. Verlag von Gustav Fischer, 1891, pp. 309-908. This textbook of Comparative Development-histories of Invertebrate Animals has been very favorably reviewed by Prof. E. Ray Lankester ("Nature," Dec. 17, 1891), who states that an English translation is in preparation. This second number of the special part treats of the Crustacea, Palæostraca, Arachnoidea, Pentastomida, Pantopoda, Onychophora, Myriopoda and Insecta, and concludes with general statements on the Arthropoda. The Insecta occupy pp. 761-890. To each of the above eight groups a chapter is devoted in which the respective subgroups are discussed as regards their 1, Embryonal development; 2, Metamorphoses; 3, Parthenogenesis, Pædogenesis and Heterogony; and 4, Summary of the group.

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* Contains new species other than North American.

Atti della Societa Toscana di Scienze Naturali, vii. Processi verbali. 10 May, 1891. List of the Cicindelidæ and Carabidæ collected near Livorno by Sign. N. Stoecklin and Dr. C. Lopez, C. Lopez. Contribution to the study of the digestive tube of Arthropoda—Histological and physiological researches on the digestive tube of Orthoptera, O. Visart.

Oregon Agricultural Experiment Station, Bulletin No. 14, Entomology, F. L. Washburn, Corvallis, Or., 1891.

Proceedings of the Zoological Society of London, 1891, Part III, Oct. 1, 1891.—On the Lycænidæ of the Solomon Islands,* H. H. Druce, 2 pls. On an interesting example of protective mimicry discovered by Mr. W. L. Sclater in British Guiana, E. B. Poulton, 1 pl.

Biologia Centrali-Americana. Part xcvii, November, 1891.—Coleoptera: vol. iv, pt. 2, pp. 345–360, G. C. Champion, pls. xiv, xv; pt. 3, pp. 137–168,† D. Sharp; vol. vi, pt. 1, supplement, pp. 273–280,† M. C. Jacoby. Hymenoptera: vol. ii, pp. 153–176, P. Cameron, pl. x. Lepidoptera-Heterocera: vol. ii, pp. 9–24, H. Druce.

Societe Linneenne du Nord de la France (Amiens), 231, September, 1891.—Entomological notes [Hymenoptera], L. Carpentier.

Entomologist's Record (London), ii, 12, Dec. 15, 1891.—Contains usual numerous notes on variations and captures of British insects.

Butterflies of North America, W. H. Edwards, 3d series, part xii, 1891.—Contains *Papilio americus*, *zolicaon*, *Chionobas Uhleri*, *varuna*.

Annales de la Societe Entomologique de France (6), x, 1e Trimestre, Aug. 8, 1890.—Descriptions of new or little-known Microlepidoptera,* A. Constant, 1 pl. Lepidoptera from the voyage of M. Ch. Allaud to Assinie, West Africa, in 1886,* P. Mabille, 2 pls. Descriptions of four new Lepidoptera,* id., *Parnia* n. gen. Formicidæ from the voyage of M. E. Simon to Venezuela, 1887–88,* C. Emery. On Arachnids from Temen,*† E. Simon. Arachnids from the expedition of Comte S. Teleki in eastern equatorial Africa in 1887–88,* id. Arachnids from the Marian Isles from M. A. Marche,*† id. Bulletin of Proceedings.—2e Trimestre, Nov. 26, 1890. Orthoptera from the voyage of M. E. Simon to Venezuela,*† I. Bolivar, figs. Hemiptera-Homoptera from the same,* L. Lethierry. Contributions to the Indo-Chinese fauna (Coleoptera),*† J. Bourgeois. Description of the larva of *Entomoscelis adonidis* Pall. and the nymph of *Quedius tristis* Grav., P. Lesne, figs. Malachidæ of Europe and neighboring countries, E. Abeille de Perrin, 4 pls. (continued in the next

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* Contains new species other than North American. † Contains new genera.

Trimestres). New or little-known Diptera, J. M. F. Bigot (Doli- odi)*†. Bulletin*†: Olfaction in Lepidoptera, S. Alpheraky and in rimestre.—3e Trimestre, Feb. 25, 1891. Pselaphidæ from the voyage . E. Simon to Venezuela,*† A. Raffray. Essay on the classification ralidæ,* E. L. Ragonot (continued in 4e Trimestre), 5 pls. Bulletin*†. Trimestre, June, 1891. Supplementary note on the Coleoptera of ck,* L. Fairmaire. Chrysomelidæ from the voyage of M. Ch. Allaud Assinie,* E. Allard. Bulletin.*†

THE LIFE-HISTORY OF SPALGIS S-SIGNATA HOLL. by W. J. Holland ("Psyche," January, 1892, pp. 201-203, 1 pl.

ATTI DELLA SOCIETA VENETO-TRENTINA DI SCIENZE NATURALI RESI- TE IN PADOVA, 1891.—Araneids of Lesina, G. Castelli. New species *Phytoptus*,* G. Canestrini.

BULLETIN DE LA SOCIETE ZOOLOGIQUE DE FRANCE (Paris), xvi, 7, July, 1. An error of sense in some insects of the family Dytiscidæ, X. pail.

L NATURALISTA SICILIANO (Palermo), ix, 1, October, 1891.—On Sicilian hoptera, G. Riggio.

## EW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### LEPIDOPTERA.

*Copæodes candida* Wright, Proc. Calif. Acad. Sci. (2), iii, p. 34, S. W. Calif.

New species of Geometridæ, H. Druce, Biol. Centr. Amer. pt. xcvii.

*Ulophora*, *U. Groteii*, N. Car., p. vii; *Glyptocera* (type *consobrinella* Z.) p. vii; *Laodamia* (type *fæcella* Z.), p. vii; *Lætilia* (type *coccidivora* Comst.), p. viii, new genera of Phycitidæ, Ragonot, Bull. Soc. Ent. France, 1890.

New genera and species of Pyralidæ, Ragonot, Ann. Soc. Ent. France, 1890, pp. 435-546.

### COLEOPTERA.

In Biologia Centrali-Americana, pt. xcvii (see *ante*), new species of *Mordillistena* and Rhipidophoridæ are described by G. C. Champion, of Rhyncophora by Dr. D. Sharp, of Phytophaga by M. Jacoby.

*Chevrolati Grouvellei*, Croissandeau Bull. Soc. Ent. France, 1890, p. clvi, Mex.

*Temnochilodes*, *T. Dugesi*, Leveille, Bull. Soc. Ent. France, 1890, p. clxxxiii, Morelia, Mex.

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* Contains new species other than North American. † Contains new genera.

## HYMENOPTERA.

New species of Crabronidæ and Pompilidæ, P. Cameron, Biol. Centr.-Amer. pt. xcvii.

## DIPTERA.

New genera and species of Dolichopodi, Bigot, Ann. Soc. Ent. France, 1890, pp. 261–296.

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# Doings of Societies.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Dec. 3, 1891.—Under short notes Mr. Howard recorded the capturing on the window-sill of his residence, November 16th, an active female of *Mantis* (*Stagmomantis*) *carolina* Burm., thus giving a record of occurrence later than that previously recorded by Mr. Lugger, viz., November 11th.

Dr. Marx read a paper entitled "Life-history of *Tholyphonus giganteus* Lucas," in which, after dwelling on the importance of even fragmentary records of the history of little known or rare animals, he gave an account of his having kept in confinement the young of this arachnid for over a year. The specimen came from Florida to Prof. Riley, and was, when received, in its first stage and newly hatched. It fed readily on roaches and refused flies. A description was given of the first stage and also after the first skin had been cast, which did not occur for over a year.

Discussed by Messrs. Mann, Marx, Test, Ashmead, Schwarz, Howard, Banks and Marlatt.

Mr. Pergande presented a note on the "Peculiar Habits of *Ammophila gryphus* Smith." A very interesting description was given of the actions of a female of this insect about the site of a completed and closed burrow, in which later examinations showed that she had deposited the full grown larva of *Heterocampa* (*sub-albicans* Grt.) *manteo* Doub., having first deposited an egg about mid-way of the body of the host larva. A figure was exhibited showing the larva with the egg *in situ* together with the specimen itself and an example of the *Ammophila*.

Discussed by Messrs. Fox, Ashmead, Schwarz and Marlatt.

Mr. Linell presented a note on the N. A. species of *Valgus*, in which, after a reference to the bibliography of the three N. A. species of the genus, a table for their separation was given. Discussed by Mr. Schwarz.

Mr. Banks gave some notes on *Prodidomus rufus* Hentz, a spider which has not been seen since Hentz's time. His remarks comprised a reference to the bibliography of the species, a statement of its relationship and characteristics together with a careful description based on immature specimens found in a drawer among loose papers last Summer. Discussed by Messrs. Fox, Gill, Marx, Howard and others.

Mr. Chittenden presented by title a paper on "Food-habits of Chrysomelidæ."

Mr. Schwarz called attention to a statement by Dr. M. Busgen (in the latter's work on the honey-dew of Aphids) to the effect that the honey-dew is not secreted from the nectaries as hitherto supposed, but ejected from the anus. He also referred to an interesting work recently published by C. A. Piepers on migratory movements of butterflies on the island of Java, and gave a brief resumé of the author's explanation of these phenomena which are comparable to the nuptial flight observed in other insects.

January 7, 1892.—Election of officers for 1892 resulted as follows:

President, C. V. Riley; First Vice-President, C. L. Marlatt; Second Vice-President, Wm. H. Ashmead; Treasurer, E. A. Schwarz; Recording Secretary, Nathan Banks; Additional members of Executive Committee, Wm. H. Fox, Geo. Marx and B. E. Fernow.

The retiring President, Dr. Marx, delivered his annual address on "An Introduction to a Monograph of the American Ticks (Ixodidæ)." In an introductory chapter the author drew attention to the absence of monographic works which would attract and facilitate the work of the beginners in Arachnological studies, and also the inherent difficulties in the obscurity of many of the classificatory characters. He pointed out the nature and extent of the work already done in the various groups of Arachnida and followed with a reference to the bibliography of the writings both foreign and American on the ticks of this country.

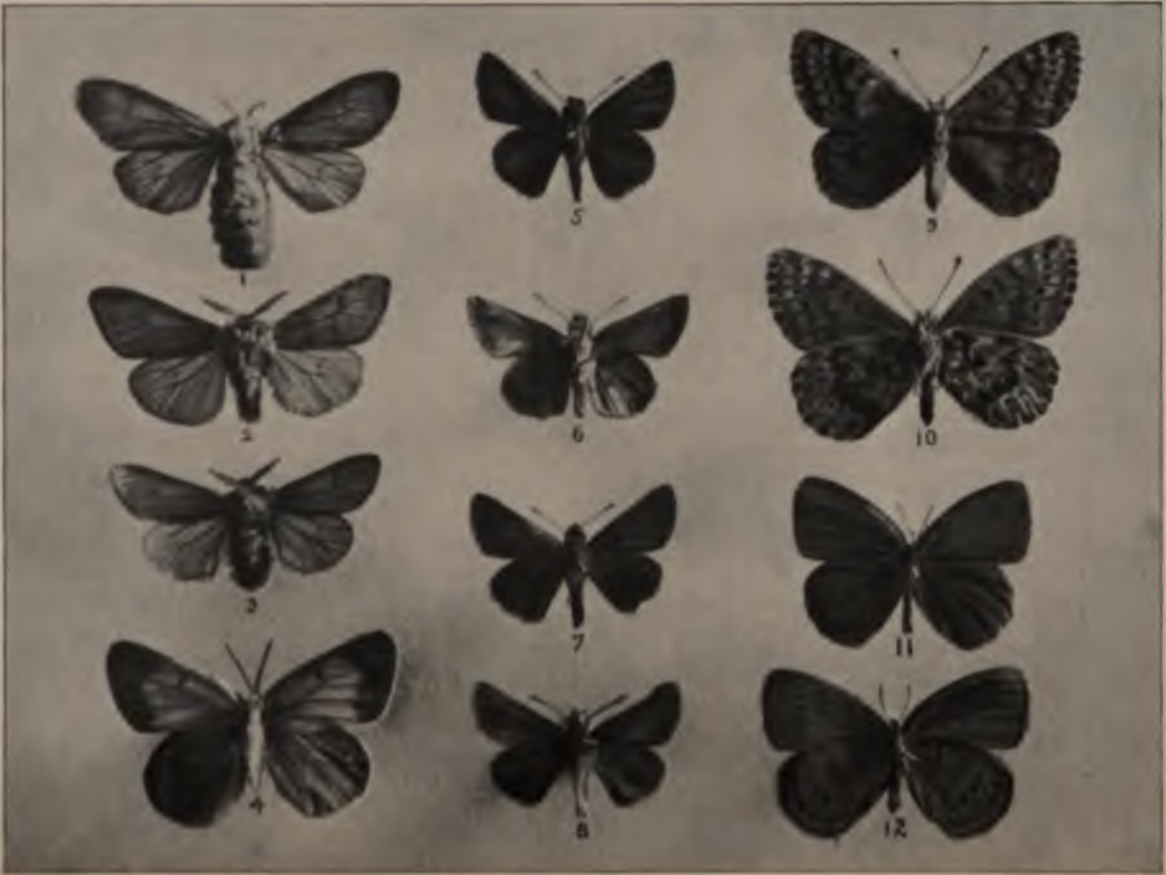
A full chapter on the morphology of ticks followed, and also extended notes on the biology of these parasites in which personal observations were recounted, showing that ticks are not necessarily parasitic on warm-blooded animals, but may reach full growth, and in fact complete the cycle of their existence on a strictly vegetable diet, and also that ticks, after being gorged with blood, may revert to vegetable food. The address was discussed by various members.

C. L. MARLATT, *Recording Secretary.*

## ERRATA.

Vol. II, p. 102, line 17 from bottom for not *read* but.
" " line 15 from bottom for at most *read* almost.

ENTOMOLOGICAL NEWS for January was mailed December 31, 1891.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# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. MARCH, 1892. No. 3.

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Plate II represents some butterflies and moths selected to test this method of illustration. The dark Hesperids in the centre row do not show up very well, as they needed a longer exposure than the remainder to bring out sufficient detail for proper identification. Some of the species represented are from Greenland, and will be discussed in a paper to appear in the Proceedings of the Academy of Natural Sciences of Philadelphia. The list of species is as follows: 1, *Dasychira gronlandica* ♀; 2, *D. gronlandica* ♂; 3, *D. gronlandica* ♂ var. (this species has never been in any of our American lists); 4, *Colias hecla* var. *pallida*, nom. in litt.; 5, *Pamphila zabulon* ♂ upper side; 6, same, under side; 7, *Pamphila Aaroni* ♂; 8, same, under side; 9, *Argynnis chariclea* var. *gronlandica;* 10, same, under side; 11, *Neonympha Mitchellii;* 12, same, under side.

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## A LONG-LIVED BASKET MAKER.

By Annie Trumbull Slosson, New York City.

In the early part of February, 1890, at Punta Gorda, Fla., I found a half finished "basket" of *Oiketicus Abbotii* Grt. The larva was still at work, and I took him with his uncompleted log-cabin to my room at the hotel. There, in a glass tumbler covered with a bit of mosquito netting and supplied with food and building materials, he lived and throve during the rest of my stay there. His food-plant was oak, but I have found this species upon so many different trees, shrubs and herbs, that it may be considered omnivorous. He ate freely and worked busily at the construction of his home. He was not particular as to the sort of building material, using bits of dried leaves, small twigs or leaf petioles indiscriminately. When I left Punta Gorda I carried the larva and case with me, going to Ormond and other parts of Florida. Early in April I returned to New York. The larva was then full grown and its case apparently finished. I could procure no oak leaves at that early season, so tried various other things, house plants of different kinds, and the dried leaves found in boxes of pressed figs. Of all these the larva ate sparingly, but enough to keep him alive and well. About the middle of May I went to Franconia, N. H., and of course took my case bearer along. He had, some days before I left home, suspended his basket from the mosquito netting at top of tumbler and been perfectly quiescent since. The journey by train and carriage did not disturb him, nor did he show any sign of life for several weeks after arriving in the mountains, I thought him dead or transformed, but made no examination. Under these conditions I ceased to cater for him, and he was entirely without access to food for some weeks. One day in June I took off the netting which covered the glass and forget to replace it. When I returned an hour later and took up the piece of netting the basket had disappeared. Every one in the house was questioned, but no information obtained, and I finally gave my *Oiketicus* up as lost. That evening my eye was suddenly caught by a dark spot on the white window curtain and there was my basket fastened neatly by a strong silken cord, and hanging quietly. From that time the life of *Oiketicus* was a series of surprises, and the unexpected was always happening. For weeks he would remain utterly motionless within his hanging case, then he would crawl down to some dried leaves at bottom of the glass, bite off, one after another, large semi-circular pieces and fasten them irregularly to his basket. Only at long intervals did he ever eat a particle as far as I could see, though constantly supplied with fresh food. In this way he spent the whole Summer. He traveled with me from place to place, was on the summit of Mt. Washington for several days, went to the Thousand Islands and Montreal and returned to New York in October.

In the latter part of January I went again to Florida, and *Oiketicus* accompanied me. He had shown no sign of life for nearly a month, and even the return to his native place did not at first revive him. But in a few days I saw him crawling about, and occasionally nibbling at a piece of dry leaf. Fresh food he scarcely ever tasted. Again I returned North, and again my larva came with me; after this he refused all food, but crawled about his glass prison, and from time to time added a bit of decoration to his house. Then he became quite motionless, and thus remained, hanging from the netting for some six weeks. In that state I carried him once more to Franconia. On a cold morning in early May, among the northern hills, his lagging, prolonged, creeping existence terminated, and he flew out a fine winged imago, nearly fifteen months from the day I first found him in southern Florida.

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## A NEW SPECIES OF COLEOPTERA FROM CALIFORNIA.

By F. E. Blaisdell, M.D., Coronado, Cal.

**Scymnus lophanthæ** n. sp.—Oval, slightly elongate, punctulate, pubescent. Head, pronotum, and entire under surface rufo-testaceous. Mouth parts piceous. Pronotum with a faint discal cloud occupying central portion, reaching quite to apical border; sides parallel in posterior half, arcuate anteriorly with apical angles slightly rounded. Elytra black, with a strong metallic lustre; pubescence dual, consisting of blackish, erect and recumbent flavo-cinereous hairs. Abdomen rather thickly set with semi-recumbent hairs.

Female.—Under parts testaceous. Length 2.2 mm.; width 1.7 mm.

*Hab.*—San Diego. There is considerable variation in the distinctness of the pronotal cloud, it may be absent or very decided. In many specimens examined the sternal and central abdominal areas were quite dark; as a rule the color is lighter in the female. My attention was first attracted to this very interesting species by Wm. Vortriede, gardener in charge of the parks at Coronado. He had observed them feeding upon the San Jose Scale (*Aspidiotus perniciosus*) infesting the *Acacia lophantha.* Subsequent observation fully confirmed his statements. The scale was exceedingly abundant, as was also the beetle in all stages of development.

# NOTES ON CALLIMORPHA.

By J. T. Mason, Houston, Texas.

During the past season I learned something new, to me, about *Callimorphia LeContei*,* which may be of interest to some of your readers, and if it is not out of place here, I would like to suggest that if collectors would give their various experiences in the field in non technical language, so that we unscientific readers can understand and profit by it, it would prove both interesting and instructive. I was anxious to get as many varieties of *LeContei* this season as possible for my own collection. I have over seventy, no two exactly alike, and I knew of a place in the suburbs of this city, not more than four acres in extent, where I had last year caught a large number, but all of the lemon variety. I was anxious to find the white, and a friend told me that the white came out first, and that I had missed the first brood last year; I had made a note of the date, and I commenced watching the place three weeks before the time I had set for their appearance; they showed up on time, but were all lemon as before. I caught what I wanted and then went to see my friend; he told me that he had caught his white ones at the Crosstimbers, some six or seven miles from town. The following day I drove down to the place and made a thorough search, but failed to find a single specimen. Towards evening I turned homeward, discouraged. In crossing the prairie the road passes through a few scattered pines, and while driving through them I saw one cross the road, a pure white one; I caught it and searched around there, but found no more. I had not driven over two hundred yards when another crossed in front of me, also white. I got out and searched again, and found them in quantities. Now I come to the peculiar feature: while the first were all lemon, so these were all white. I did not find, out of possibly a thousand caught, one single lemon one, notwithstanding that a few days afterwards I found another lot of lemon on this same prairie not over one mile distant from the latter, and there was no white amongst them. Now the question I ask myself is, why do the two colors keep separate? *they are undoubtedly the same moth.* Here are two separate colonies within a mile of each other, on the open prairie, absolutely no barrier between them, why do they not mingle? I caught among the lemons some that appeared to be pure white, but when compared with the white, of the white variety, they are a cream-white, and readily distinguished. I note still another peculiarity. I have, as I said before, over seventy with no two exactly like. We will take say the lemon, we have the fully marked upper wings and the markings decrease gradually until we come to the pure white, or rather cream upper wing and lemon under wing, and then the all cream, both upper and under; the same is true of the white variety, except that the pure white are by far the most plentiful. Still in all this large variety of markings or parts of them if continued would make the perfect pattern, as a friend remarked while looking at them, that they looked as if the wing originally was white and the color afterwards stenciled on, the feebly marked representing where the brush was full of coloring matter, and down through all the degrees of dashes and dots until finally we come to the one without a mark.

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* The two insects herein mentioned are *C suffusa* Smith and *C. lactata* Smith, which are probably forms of *Colona* Hbn. — *Clymene* Esp.—Ed.

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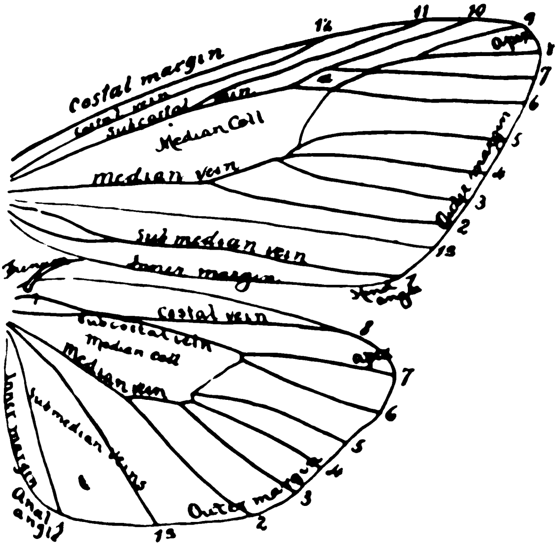
# ELEMENTARY ENTOMOLOGY.

## LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

In examining the denuded wings, one of the first things noticed is, that more supporting veins reach the outer margin than reach the base; that while a very few trunks extend from the base to the margin of the wing, two large trunks start from the base, but rarely extend beyond two-thirds of the distance to the outer margin, giving off at that point a variable number of branches. These main trunks that reach the base are called veins, whether or no they reach the margin as well. The branches, which reach the margin, but do not reach the base, are called venules. Beginning at the anterior edge of the primaries we find a vein close to the thickened front margin, extending from the base to the margin always before the tip of the wing. This is the costal vein; it is almost universally present, is never branched in my experience, and has no modifications of systematic value save that there may be a cross branch extending between it and the costa. Next below the costal vein at base is the subcostal, running parallel and sometimes very close to the costal, but rarely extending much beyond the middle of the wing. This vein gives off, normally, six branches, which are called the subcostal venules. Of these, one or two usually separate from the main trunk before the end, and the others are grouped at the tip. Sometimes, to facilitate this grouping, a cell is formed around which the branches start, and this, when present, is termed the accessory cell, marked *a* in the figure. Sometimes, instead of all the branches reaching either the vein or the accessory cell, a stalk may be sent out, which in turn branches. So in the figure, branches 8 and 9 are from a stalk out of the tip of the accessory cell; 6, 7 and 10 are out of the accessory cell, while 11 is out of the subcostal itself. The accessory cell is present in comparatively few families only, and its presence or absence is of systematic value. The arrangement of the subcostal venules is also used in classification, and quite frequently some of them are wanting.

Below the subcostal at base is the median vein running parallel to, but more or less diverging from the subcostal, and extending



usually about as far into the wing. The space between the subcostal and median veins is called the median cell. Quite usually a slender transverse veinlet extends from the tip of one to the tip of the other, and the cell is then said to be closed, as in the figure. When this transverse veinlet is wanting, the cell is said to be open. The median vein gives rise to four branches—the median venules—the first of them usually some distance before the tip, the others, grouped more or less closely, from the end. The arrangement of these veins is of systematic value, and especially the position of the last of the branches, marked 5 in the figure. This sometimes severs connection with the series to which it belongs and arises, apparently out of the cross-vein; or, where there is no distinct cross-vein out of the tissue itself, and it is then called the independent. Sometimes it is nearer to 6 than to 4, but never becomes one of the subcostal series; sometimes it is altogether wanting, and it is one of the most valuable from the systematic standpoint of the venules of the primaries.

Below the median vein at base is the submedian, extending parallel with the hinder or inner margin to the anal angle. It is rarely absent, and never branches. It sometimes becomes forked at the base, and this furcation is given great systematic value. It is one of the distinctive characters of the Noctuidæ, and its absence would be sufficient in most cases to exclude a species not so characterized; sometimes a supplementary vein will be present running parallel with the submedian, and between it and the median. This is the second submedian, and its presence characterizes a small number of families.

This makes the normal 12, or exceptional 13 veins of the primary. For convenience they are numbered as they reach the margin, beginning at the anal angle. The submedian is number 1, the second submedian is 1*a;* veins 2 to 5, inclusive, are median branches; veins 6 to 11, inclusive, are subcostal branches, and vein 12 is the costal. The numbers are more convenient to use in descriptive work, and, as the plan is so uniform, it is quite as accurate and scientific.

Beginning at the base of secondaries, along the anterior margin we find first the costal vein, usually reaching quite close to the tip of the wing. This affords good characters. Sometimes it is entirely wanting; sometimes it is connected with the subcostal by a cross-vein; sometimes it does not reach the base at all, but unites with the subcostal, and sometimes it unites and separates again, forming a small cell at the base as in the figure.

Below the costal is the subcostal vein running parallel with it a variable distance and then forking at the tip, never into more than two branches. One of these branches may also be obsolete, and there may then be a single vein running from base to outer margin.

Below the subcostal at base starts the median vein, and this in its branchings is exactly like the corresponding vein of the primaries. The median cell is also formed in the same way, and may also be either open or closed. As in the primaries, vein 5, the last branch of the median, is very variable in position, and furnishes good characters. Below the median there may be one, two or three submedian veins, and these furnish bases for large divisions. The *Tortricids* and *Pyralids*, for instance, all have three internal or submedian veins, while the *macros* rarely have more than two. Sometimes one or the other of these veins forks at the base, and this also is a good character. Counting all the median veins as one, the secondaries have eight veins, the subcostal system being little developed as compared with the primaries. Here also the numbering system is most generally used, the numbers in the figure being those generally adopted.

At the base of the secondaries next the primaries, there is frequently a spine or spur, which fits into a more or less evident loop on the under side of the primaries, and serves to hold the wings together. This is called the frenelum or frenum. There is a curious sexual modification in this structure. In the males it is always a single spine only. In the female it is never simple, but there are two, three, or even four weaker spines, or even a little bunch of stiff hair only.

The above is the typical venation to which all modifications found in the Lepidoptera may be reduced. A few aberrant types only, like the Hepialidæ and Psychidæ, will need special explanation.

(To be continued.)

A St. Louis physician states that he has discovered peculiar microscopical insects in cigarettes. This may account for the wormy look so many of their consumers wear.—*Washington Post.*

A canary with a swollen hind toe was brought to a bird fancier recently, and he pronounced the trouble poisoning from a mosquito bite. He said the thing was not uncommon.—*New York Sun.*

# AN AMERICAN SPECIES OF TEMPLETONIA.

By F. L. Harvey, Orono, Maine.

**Templetonia americana** n. sp.

Mr. Macgillivray, in his recent catalogue of the Thysanourons of North America (Can. Ent. December, 1891), makes no mention of the occurrence of *Templetonia* in America. Having studied a species of this genus the first season that is quite common about Orono, Me., we record the following observations upon it:

*Generic characters* in every particular as recorded by Lubbock (Monograph Collembola and Thysanoura p. 142).

*Specific characters.*—Silvery white, sometimes pale brownish or rusty color, laid on in spots and streaks; a delicate pink reflection, especially from young specimens; clothed with silvery iridescent scales; eye patches very small, pale brown. Head nearly round, somewhat pointed in front, broadest behind and somewhat longer than broad. Antennæ white, five jointed, basal joint short, about one-fourth the length of the second; terminal joint nearly or quite as long as the third and fourth together, slender, and, in mature specimens, composed of seventeen sub-joints, the basal and terminal sub-joints each one-fifth the total length of the joint; the middle three-fifths composed of fifteen nearly equal sub-joints; in younger specimens the terminal joint seems shorter and composed of fewer sub-joints. Body elliptical and rounded anteriorly, widest at the fifth segment; first, fifth and sixth segments long, third segment short. Legs white, rather long; larger claw long and slender; elater long, basal joint four-fifths the total length. Thoracic collar of numerous bowed, club-shaped hairs; similar ones on the head, and a dense tuft of hairs projecting forward between the antennæ and reaching to the third joint; scattered long hairs on the segments of the body.

*Measurements.*—Total length 1.65.; head, .345 mm. long, .292 mm. broad; antennæ, .718 mm.; length of the joints in the ratio of 1-4-5-6-11; elater, .8 mm.; basal joint, .367 mm.; claw, .046 mm. long; segments of the body in the ratio of 15-10-6-10-15-13-7-3 in one specimen, and in another 11-6-2-6-8-15-5-2.

The above measurements were made from the largest specimens seen.

*Remarks.*—This is a smaller species than *T. crystallina* Muller. The largest ones we saw did not measure over 1.65 mm., while the majority were never over 1.5 mm., and many less. Lubbock gives the length of *T. crystillina* Muller as two and a quarter millimetres. Our specimens are not obovate, but more elliptical oblong, and widest at the fifth segment. The antennæ of Lubbock's species as figured in his monograph, are considerable more than half the length of the body and head, and quite slender. In this species the antennæ are thick and about equal to or less than half the length of the body and head. The terminal joints of the antennæ as shown in Lubbock's figure are made up of fully *twenty-five* sub-joints of about equal length; while this species has in the largest specimens only seventeen joints and a less number in smaller ones, while the basal and terminal sub-joints are as long as described above.

Some of our specimens when alive showed traces of rusty streaks and spots, but after being in alcohol for three months there is no evidence of the reddish spots said to develop under such conditions upon *T. crystallina*. Balsam specimens are a beautiful pink color. The movements of this species are sluggish, and though provided with a well developed spring it does not seem disposed to use it, unless absolutely necessary.

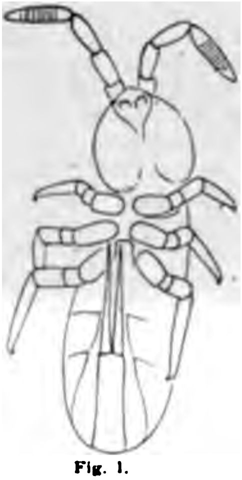


Fig. 1.

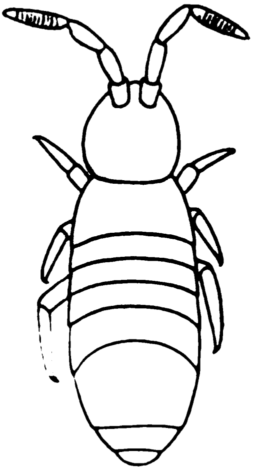


Fig. 2.

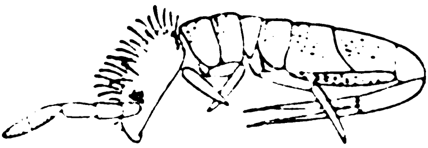


Fig. 3.

We have not examined *T. crystallina* Muller, but the smaller size, shorter, thicker antennæ with fewer sub-joints to the terminal segment, the more elliptical form of the body and the fact that it does not develop red spots in alcohol, would seem to separate this form from that species. Figs. 1, 2 and 3 represent the dorsal, ventral and side view of a young specimen 1.1 mm. long, magnified forty-five times: 1 and 2 show the general form of the body, somewhat too broad, and the terminal joints of the antennæ in all the cuts have fewer sub-joints than occur in adult specimens, and the short basal or fifth joint to the antenna does not show. The figures were made for the writer from line specimens by Mr. J. H. Emeston, of Boston, Mass.

Found under boards at several places on the college campus at Orono, also in abundance in the writer's garden in potato hills, about the tubers affected by potato scab and potato rot. Sometimes nearly a dozen would be found on a single tuber in the depressions made by the scab. Associated with *Iratonia tricolor*, *Lipura ambulous*, *Lepidacyrtis metallicus*, *Tomocerus plumbeus* and an undetermined *Achorutes*. Many specimens examined during September, October and November, '91, by F. L. Harvey.

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## List of Hemiptera Collected in Jamaica, W. I.

By C. W. Johnson and Wm. J. Fox.

The following Hemiptera were collected in Jamaica during April and May, 1891. Most of the species were obtained at Kingston, Morant Bay, and Port Antonio ; those of common occurrence are indicated by an asterisk (*). We are indebted to the kindness of Prof. P. R. Uhler for the determination of the species, which have been placed either in the collection of the American Entomological Society, or the Wagner Free Institute of Philadelphia.

*Sephina maculata** Dallas, *Leptoglossus stigma* Herbst, *Anasa bellator* Fab., *A. scorbutica* Fab., *Aceratodes bifida** Say, *A. meditabunda* Fab., *Nezara marginata* Bv., *Aethus nigerrimus* Dallas, *Proxys victor** Fab., *Thyanta perditor** Fab., *Catorhintha guttula* Fab., *Euchistus crenator** Fab., *Mormidea pictiventris** Stal, *Zicca tæniola* Dallas, *Alydus pallescens* Stal, *Lygæus varicolor* Fab. (var.), *L. pulchellus** Fab., *L. aulicus* Fab., *L. sandarachatus** Say, *Dysdercus mimus** Say, *D. andreæ** Linn., *D. sanguinarius* Stal, *Zelus rubidus** St. Farg., *Harmostes nebu-*

*losus* Stal, *Corizus sidæ** Fab., *Megacœlum rubrinerva* Dist., *Lygus* sp., *Corimelæna minuta** Uhler, *Plagiognathus indistinctus** Uhler (MS.), *Pycnoderes insignis* Reut., *Collatia explicata** Uhler, *Salda humilis* Say (var.), *Rhogovelia collaris** Burm., *Parmera bilobata* Say, *P. parvula* Dallas, *Geocoris disparatus* Uhler (MS.), *Tettigonia herbida** Guér., *T. flaviceps* Riley, *T. robusta** Sign., *T. robusta** Sign. (var.), *T.* n. sp.?, *Agallia* n. sp.?, *Ormenis pallescens* Stal, *Dascalia acuta* Uhler (MS.), *Paroristes humilis** Uhler (MS.), *Bothriocerus* sp., *Copicerus thoracicus* Guér., *Centrotus havanensis* Guér. (var.), *Ophiderma scutellatus** Uhler (MS.).

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## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

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**To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception.** ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

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Mr. JAMES ANGUS, of West Farms, New York City, has presented his fine collection of insects to the American Museum of Natural History.

TRANSACTIONS of American Entomological Society.—Of volume xix (1892) twenty-four pages have been printed, containing "Studies in Chrysomelidæ," by Dr. G. H. Horn, and the first pages of "A Study of Amara, s. g. Celia," also by Dr. Horn. This volume promises to be an unusually good one, and we propose to notice the progress made from month to month.

CARABUS NEMORALIS Müll.—In the Trans. Am. Ent. Soc. 1875, p. 126, I made mention of having seen a specimen of *C. hortensis* Fab. ( = nemoralis *Mull.*) in the cabinet of Mr. A. Murray, of London, with the label Hudson's Bay. Being unwilling on the evidence of one not very well authenticated specimen to admit the species to our lists, no other record than that above recorded has been made. In December last I received through the kindness of Mr. Henry S. Harbeck, of New York City, two specimens of this species with the following information, which I transcribe: "While on a business trip to St. Johns, N. B., in April and May, 1890, Mr. C. B. Riker, of Maplewood, N. J., devoted his leisure time to collecting Coleoptera, and among his captures were fourteen *Carabus nemoralis*, which, as you say, is the first authentic case of its occurrence in North America. He says that the beetles were quite common and those that he took were collected in less than an hour." From this it is evident that *nemoralis* is fairly naturalized in America, and should now be added to our list and placed after *limbatus*.—G. H. HORN.

HEXAPLASTA ZIGZAG (Riley).—Although first made known as a native of the cotton-growing States, this insect is a familiar inhabitant of New England, being found during the first warm days of Spring upon the dandelion blossoms, and in July upon windows in company with two species of *Phora*. The radial cell varies in being either open or closed. The disc of the scutellum is convex.—W. H. PATTON, Hartford, Conn

NOTE ON CYCHRUS.—In the January number of ENT. NEWS, Mr. H. F. Wickham gives a note on the geographical distribution of *Cychrus*, which is very interesting, and an invitation to the readers thereof to furnish more notes on geographical distribution. This brings to my mind a little incident which may be of interest to the readers. In the early part of Spring, 1890, while collecting on an island, situated on the beautiful sandy New Jersey coast, I was pleasantly surprised by the capture of *Cychrus elevatus* Fab. I did not expect to find the genus inhabiting this locality. Although carefully searching I could only find the one. The next day, about one-half mile from where I found the first, I had the reward of capturing the second. The specimens differ very much from those found on the mainland proper, as they are minus that beautiful lustre, and the thorax is not so well developed, in all they resemble somewhat more the Pacific coast fauna. As these are the only specimens of *Cychrus* that I know of as having been found on the New Jersey coast, it is very interesting, and I should be pleased to hear if other species have been found inhabiting the islands along the coast.—H. W. WENZEL, Phila.

Mrs. A. T. SLOSSON by this time has probably started on a trip to the Southwest, taking in Louisiana, Texas, and perhaps Mexico. We suppose that many bugs in those regions will have to deliver up some of their interesting secrets.

THE *Anthophora* described by me in Bull. U. S. Geol. Surv. v, is *A. Walshii* ♀. I took *A. Smithii* in Kansas in 1881, and have received specimens of it from California. *Plistotrichia* Morawitz, is a synonym of *Anthophora;* it differs merely in the individual aberration of the venation described by me in *Anthophora* and *Clisodon*.—W. H. Patton, Hartford, Ct.

The following has been extracted from a circular which has been sent to entomologists and others. We hope the collection may be obtained and provision made for its preservation: "Dear Sir,—An effort upon the part of a few professional and personal friends of the late Harry Edwards, to purchase and present to the American Museum of Natural History (of the city of New York) his magnificent Entomological Collection, has met with so much encouragement that the Committee in charge ventures to call your attention to the matter. A number of gentlemen have already subscribed one hundred ($100) dollars each towards the sum required, fifteen thousand ($15,000) dollars, and it is hoped that you will be willing to contribute a similar amount. The object of the movement is not only to secure for the city of New York a treasure of inestimable value, but to make smooth the declining years of the widow of our friend, and to raise to the memory of an excellent actor, a distinguished scientist and a good man, a worthy and lasting monument.

"(Signed) Edwin Booth, Jos. Jefferson, Theo. Moss, S. P. Avery, W. C. Prime, Lawrence Hutton, A. M. Palmer, Treas., 29 W. 30th St., New York City."

In a letter from Mr. W. F. Kirby, of the British Museum, the following may interest the readers of the News, premising that everybody knows that Mr. Kirby is at work on a catalogue of the Heterocera of the world. "My first volume (Sphinges and Bombyces) will run to about 800 pages, and include, I think, 28 families, some of them numbering over 200 genera. All but four are now in the printer's hands, so that I hope the publication of the book will not be much longer delayed." * * * "I have relegated the Sesiidæ to the neighborhood of the micro-lepidoptera. I doubt if you have any Heterogynidæ in America. *Heterogynis* is a small European genus with males like *Procris*, but with apterous females." Mr. Kirby's book, when published, will form one of the most useful assistants the working entomologist can have.—John B. Smith.

A bit of History.—Miss Morton's very interesting notes in the January number of Ent. News show that there is some confusion among the names of the smaller Limacodidæ, and it may be interesting to briefly go over the literature of these forms. In 1854, Herrich-Schäffer published three figures as *Limacodes texula*, *L. pallida*, and *L. flavula*. In 1864, Packard erroneously identified a specimen in the Harris collection as *L. textula*, and, believing it separable from the genus *Limacodes*, created the genus *Isa* for it. In the same year he also described *Heterogenea shurtleffii*, and made the genus *Tortricidia* for Herrich-Schäffer's species *pallida* and *flavula*. In 1866, Grote & Robinson described *Limacodes inornata*, and in 1876, Grote created the genus *Sisyrosea* for it. Finally, in 1880, Grote described the species *Limacodes cæsonia* and *L. flexuosa*. Now, as far as I know, there are but four species for all these names. The larva of the first one was figured in Harris' "Entomological Correspondence," and has been described by Mr. Hulst and by myself. The moth was first described as *inornata*, but is the species for which the genus *Isa* was made, and should be known as *Isa inornata*. The larva of the second is unknown. It is *Heterogenea shurtleffii*, of which *cæsonia* Grt. is a variety. The larva of the third is also unknown. It is the *textula* of Herrich-Schäffer (not of Packard), and was redescribed by Grote as *flexuosa*. It should be known as *Heterogenea textula*. The larva of the fourth species is the one described by Miss Morton. It has also been described by myself, and should be known as *Tortricidia pallida* H.-S. *T. flavula* is only a variety of it, and represents the form without marks on the wings which Miss Morton describes. These species are correctly arranged in Prof. Smith's new List.—H. G. DYAR.

DRASTERIA ERICHTO.—Has this noctuid been satisfactorily identified since Gueneé's description of a single female in 1852? Some of our collections, I am aware, contain specimens labeled *erichto*, that were determined by Mr. Grote. However, specimens of our eastern *Drasteria* sent to Mr. Grote just before he left this country, and also those sent to Prof. Smith since he became our recognized authority on the Noctuids, have all been referred to *erechtea*. In 1873, Mr. Grote, in Bull. Buffalo Soc. Nat. Sci. i, p. 155, admitted that he could not separate the two species except in size, referring the specimens of the smaller Spring brood to *erichto*. Of two specimens, a ♂ and ♀, in the University collection determined by Mr. Grote as *erichto*, the ♀ proves to be an *erechtea*. I presume other collections contain similar specimens. Recently Prof. Smith wrote me that he had not tried to identify *erichto* and had not the slightest doubt that *erichto* is the same as *erechtea*. During the past year I have bred what I believe to be *erichto*. I thought I was breeding *erechtea*, but recent study and comparisons of my bred specimens and a large series of *Drasteria* caught in trap-lanterns has shown that we have two species of *Drasteria* in our eastern fauna, both about equally common I think, and differing considerably structurally and rather closely grading into each other in markings. The structural differences are marked and very constant. The genitalia of the males and the seventh abdominal segment of the females differ strikingly in size and form. I find that the species are easily separable by these characters and typical strongly marked specimens of either sex may be quite readily identified by the markings on the front wings. I hope soon to be able to illustrate some of these differences, but I desire to make further observations upon the range of variability of *erechtea*.—M. V. SLINGERLAND, Cornell Insectary, Ithaca, N. Y.

A PLEA FOR THE COLLECTOR.—Prof. J. B. Smith's list of "The Lepidoptera of Boreal America" came to hand a short time ago, and has afforded me a great deal of pleasure and instruction. If I understand it aright, this is the first complete list of the kind that has been published in this country, and I am sure that Prof. Smith and the other learned gentlemen who were associated with him in getting it up have given students of this department of Entomology a work that may be relied upon as being as near complete and correct as can be got at present. Bearing in mind the article entitled "Rocks," which appeared in the NEWS some time ago, would not this list be a good foundation for a descriptive work on the Lepidoptera of North America? Could not the gentlemen who got up this list be induced to publish a work, in monthly parts, containing descriptions and plates of the Heterocera at least, if subscribers enough could be got to ensure them against financial loss? We already have good works on the Butterflies, and they might, therefore, be left out, as also the very small moths. The plates, of course, could not be colored, except at a great cost, but plates such as have been appearing in the NEWS, with a description attached, are every bit as good. A great many who study this subject are business men who have not the time and skill to identify their specimens without the help of plates, and I take it their number would become legion compared to what it is now if such a work could be got at a moderate cost. It may be objected that such a work, when finished, would be incomplete on account of the new species that are being constantly discovered, but if we were to wait ten or even twenty years, the same objection would still hold good. In Europe, where the Lepidoptera have been studied for a great number of years, new species are still being discovered, and in spite of that a new work on the Lepidoptera of Great Britain is just being commenced in London. If you will kindly give this a place in the NEWS it may be the means of helping to make such a work as I suggest a possibility at least, if not a probability of the near future.—JAMES TOUGH, Chicago, Ill.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

## Entomological Literature.

NEUNZEHNTER JAHRESBERICHT DES WESTFAELISCHEN PROVINZIAL-VEREINS FUR WISSENSCHAFT UND KUNST FUR 1890. Muenster, 1891.—Observations on the occurrence of melanism among the macrolepidoptera of the vicinity of Dortmund, K. Meinheit.

LA NATURE (Paris), Dec. 26, 1891.—Influence of artificial lights on insects, G. A. Poujade; figs.

U. S. DEPARTMENT OF AGRICULTURE. Division of Entomology. Bulletin No. 24.—The Boll worm of cotton. A report of progress in a supplementary investigation of this insect. Made under the direction of the Entomologist by F. W. Mally, Washington, 1891, 50 pp. *Heliothis armigera* Hüb.

REVUE SCIENTIFIQUE (Paris), Dec. 26, 1891.—Insects destructive to forests according to M. A. S. Packard, anon. A means of destroying grasshoppers according to M. Decaux, anon.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Dec. 5, '91. —Heterocera exotica, new genus and species from the Dutch East Indies,* F. J. M. Heylaerts; *Gnophrioides* n. gen. Melanges Entomologiques: VIII. Diagnoses of Coleoptera from the Congo,* A. Duvivier. Notes on indigenous Coleoptera malacoderma, E. Rousseau. Additions and annotations to the lists of indigenous Lamellicorn and Carnivorous Coleoptera, A. P. de Borre.

PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES (2), vi, 1. Sydney, Sept. 9, 1891.—Notes on a small collection of Hymenoptera from Narrabri, N. S. W., W. W. Froggatt. Description of a new species of Tortricidæ,* J. H. Durrant. Stray notes on Lepidoptera,* A. SO. Iliff.

CANADIAN ENTOMOLOGIST, Jan., 1892.—Can insects survive freezing? H. H. Lyman. Descriptions of some butterfly larvæ from Yosemite (v), and the life-history of *Callidryas eubule*, H. G. Dyar. Revision of the Bombylid genus *Epacmus* (*Leptochilus*), D. W. Coquillett. *Hetærina americana* [in Ontario], J. A. Moffat. Canadian Galls and their occupants—*Aulax nabali* N. S., W. Brodie. Entomology for Beginners, No. 1, J. Fletcher. An explanation, A. R. Grote. *Melitæa phæton*, *Petrophora silaceata*, J. A. Moffat. Prof. J. B. Smith's list of Lepidoptera, G. H. French. Larva of *Anceryx fasciata* Swains., T. D. A. Cockerell.—February, 1892.—Entomology for Beginners No. 2, J. Fletcher. Two new Orthoptera from Indiana, W. S. Blatchley. Some Indiana Acrididæ II, id. Further notes on *Gelechia gallædiplopappi*, and description of a new species of *Bracon*, Rev. T. W. Fyles. Notes on the life-history of *Agallia sanguinolenta* Prov., H. Osborn and H. A. Gossard. On the Orthopterous fauna of Iowa, H. Osborn. How the female of *Cacœcia semiferana* protects her egg clusters, C. P. Gillette. Notes on Coleoptera No. 9, Dr. J. Hamilton. Notes on the Aegeridæ of central Ohio, D. S. Kellicott.

ANNALEN DES K. K. NATURHISTORISCHEN HOFMUSEUMS, vi, 3, 4, Wien, 1891.—To the knowledge of the Hymenopterous genus *Philanthus* Fabr. (sens lat.),* F. F. Kohl. Bumble-bee studies, A. Handlirsch, figs. African Lepidoptera of the k. k. Naturhistorische Hofmuseum,* A. F. Rogenhofer, 1 pl.

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* Contains new species other than North American.

Hardwicke's Science Gossip (London), January, 1892.—Famous collecting grounds for Dragonflies [by W. H. Bath].

Transactions of the Entomological Society of London, 1891, pt. iv, December, 1891.—New species of Heterocera from the Khasia Hills,* Col. C. Swinhoe, 1 pl., *Kalmina micronissa*, *Anthyperythra* (Warren MS.), n. gen. On some cases of Dimorphism and Polymorphism among Palæarctic Lepidoptera, S. Alpheraky. Effect of change of climate upon the emergence of certain species of Lepidoptera, G. F. Mathew. Descriptions of new species of holophthalmous Ascalaphidæ,* R. McLachlan; *Campylophlebia* n. gen. Descriptions of four new species of the genus *Fulgora*,* W. L. Distant, 1 pl. On the South American species of *Diabrotica*, appendix, C. J. Gahan.

Insect Life, iv, 5, 6, December, 1891.—Wheat and Grass Sawflies, C. V. Riley and C. L. Marlatt, figs. The importation of a Hessian Fly parasite from Europe, S. A. Forbes. The origin and development of parasitism among the Sarcoptidæ, H. Garman. Origin and development of the parasitic habit in Mallophaga and Pediculidæ, H. Osborn. The use of grape bags by a paper-making wasp, Mary E. Murtfeldt. The methods of pupation among the Chalcididæ, L. O. Howard, figs. Notes on grass insects in Washington, D. C., H. Osborn. An interesting aquatic bug. Hominivorous habits of the screw worm in St. Louis, Mary E. Murtfeldt. Another spider egg parasite, L. O. Howard.

British Naturalist (London), January, 1892.—Portrait and sketch of Lord Walsingham. Notes and lists of captures of British insects.

Neue Odonaten von Ecuador,* von Dr. F. Karsch (Reprint from Societas Entomologica vi, 14-16) *Neuragrion* n. gen.

Bulletin of the Illinois State Laboratory of Natural History, vol. iii, art. xii.—Sixth contribution to a knowledge of a life-history of certain little known Aphididæ, C. M. Weed.– Vol. iv, art. i. Bacteria normal to digestive organs of Hemiptera, S. A. Forbes.

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Proceedings of the Royal Society, l, 303, London, Jan 8, 1892.— A new mode of respiration in the Myriapoda, F. G. Sinclair.

Annals and Magazine of Natural History (6), 49, January, 1892. —Notes on Longicorn Coleoptera of the group Cerambycinæ, with descriptions of new genera and species,* C. J. Gahan. On some Japanese species of *Paromalus*,* G. Lewis. Descriptions of two new genera of Scorpions, with notes upon some species of *Palamnæus*,*† R. I. Pocock, 1 pl. Description of a new trap-door spider from Ceylon,* id.

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* Contains new species other than North American. † Contains new genera.

WIENER ENTOMOLOGISCHE ZEITUNG, xi, 1, January, 1892.—On the pretended present decline of Entomology, E. Reitter. Analytical revision of the European species of the Tenthredinid—genus *Schizocera* Latr.,* F. W. Konow. A new *Leptis* from Switzerland,* T. Becker. Coleopterological notes,* E. Reitter.

REVISTA DEL MUSEO DE LA PLATA, I, La Plata, 1890-91.—Argentine Dipterology [Culicidæ], F. L. Arribalzaga.

STUDIES FROM THE BIOLOGICAL LABORATORIES OF THE OWENS COLLEGE II, Manchester, England, 1890.—The pupal stage of *Culex*, Dr. C. H. Hurst, 1 pl.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, iv, 4, January, 1892.—Study on some galls from Syria [Acarocecidæ],* Dr. H. Fockeu, figs.

NOTES FROM THE LEYDEN MUSEUM, xiii, 3, July, 1891.—Description of a new Curculionid,* W. Roelofs, 1 pl. New genus and species of the group of *Oxyopisthen*,* id. A new genus of Calandrinæ, C. Ritsema Cz. A new species of *Rhyncophorus*,* id. Two new species of the genus *Helota* from Borneo,* id. Synopsis and alphabetical list of the described species of the Coleopterous genus *Helota* McL., id. *Polyctesis igorrota*, a new species of Buprestidæ,* K. M. Heller. Contributions to the knowledge of the family Brenthidæ,* Dr. A. Senna. On the Ceylon Cetoniidæ collected by J. Z. Kannegieter,* J. R. H. N. van de Poll and J. Z. Kannegieter. A new species of the Longicorn genus *Neopharsalia* v. d. Poll,* J. Z. Kannegieter. Four new species of Gyrinidæ of the genus *Orectogyrus*,* M. Regimbart.—No. 4, October, 1891. Two new species of the Lucanoid genus *Cyclommatus* Parry, C. Ritsema Cz. A new Oriental species of the Coleopterous genus *Chelonarium*,* id. Further contributions to the knowlege of the *Helota* species of Burma,* id. *Lomotropa vellerialis*, new species of Pyralidæ,* P. C. T. Snellen. Description of nine new Elateridæ from the Leyden Museum,* E. Candeze.

ENTOMOLOGISCHE NACHRICHTEN, xviii, 1, Berlin, January, 1892.—Description of some new varieties of butterflies from Bucovina and the vicinity,* C. von Hormuzaki. On some rare Tracheata from Rheinland, C. Verhoeff. Five new African Mantodea,* Dr. F. Karsch; *Dactylopteryx* n. gen. Some biological fragments, C. Verhoeff.

ZOE, ii, 4, Jan. 12, 1892.—Some biological peculiarities of the Phylloxera and a method of utilizing them for the protection of vineyards, H. H. Behr.

TRANSACTIONS OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xiv. Adelaide, July, 1891.—Description of a new species of *Cossus*,* J. G. O. Tepper, 1 pl. Further notes on Australian Coleoptera, with descriptions of new genera and species,*† Rev. T. Blackburn. Descriptions of new Australian Lepidoptera,* E. Meyrick; *Momopola* n. gen.

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*** Contains new species other than North American. † Contains new genera.**

**Die Kaefer von Mitteleuropa.—Die Kaefer der oesterreichisch-ungarischen Monarchie, Deutschlands, der Schweiz, sowie des franzoesischen und italienischen Alpengebietes, Bearbeitet von Ludwig Ganglbauer. Erster Band. Familienreihe Caraboidea. Wien, Carl Gerold's Sohn, 1892, 557 pp., 55 woodcuts.**

**Cornell University Agricultural Experiment Station, Bulletin 33, Entomological Division, Ithaca, N. Y., November, 1891.—Wireworms, J. H. Comstock and M. V. Slingerband; figs.**

**Notes upon the Transformations of some African Lepidoptera by W. J. Holland (from Psyche, vi, pp. 213–216, pl. 5).**

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**Zoologischer Anzeiger (Leipzig), Jan. 11, 1892.—On sense organs in the palpi and first pair of legs of Solpugidæ, Dr. P. Bertkau, fig.**

**Compte Rendu. Societe de Biologie (Paris), Jan. 9, 1892.—The wandering cricket (*Schistocera peregrina* Oliv.) and its cryptogamic parasite (*Lachnidium acridiorum*), E. A. Giard.**

The Entomologist (London), February, 1892.—The past wet Summer and its probable effect upon the development of Lepidoptera, R. Adkin. Evolution of colors in the *Vanessæ*, W. W. Smith. Evolution of insect colors, F. H. P. Coste. Use of the hairs of *Acronycta alni*, M. Fitz-Gibbon. Notes on British insects, etc.

Bollêtino dei Musei di Zoologia ed Anatomia comparata della R. Universita di Torino, 108, Sept. 20, 1891.—Diagnoses of four new genera of Diptera, Dr. E. Giglio-Tos.

Untersuchungen ueber Glatte und Vollkommen Querstreifte Muskeln der Arthropoden von Dr. Julius Vosseler, Tubingen, 1891, H. Laupp, pp. xii, 150, 6 plates.

The Entomologist's Monthly Magazine (London), February, '92. —A new genus and species of Aleurodidæ,* A. C. F. Morgan, 1 pl., *Aleurodicus* n. g. Description of three new species of the genus *Phanaeus* Macleay,* B. G. Nevinson. Annotated list of British Tachinidæ, R. H. Meade. Stylopized bees, F. V. Theobald. Oviposition of *Adela viridella*, T. A. Chapman. On the rearing of *Pachetra leucophæa* from the egg, W. R. Jeffrey. Notes, etc.

* Contains new species other than North American.

BULLETIN OF THE MUSEUM OF COMPARATIVE ZOOLOGY AT HARVARD COLLEGE, xxii, 3, Cambridge, January, 1892.—Amitosis in the embryonal envelops of the scorpion, H. P. Johnson, 3 plates.

MISSISSIPPI AGRICULTURAL AND MECHANICAL COLLEGE EXPERIMENT STATION, Bulletin No. 17.—Insects injurious to stored grain, H. E. Weed. December, 1891.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xviii, 4, September-December, 1891.—The species of *Agrilus* of Boreal America, G. H. Horn, M.D., 1 pl. On a collection of Hymenoptera made in Jamaica during April, 1891, W. J. Fox. Notes on North American Tachinidæ *sens. str.* with descriptions of new genera and species, C. H. Tyler Townsend.

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## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### NEUROPTERA.

*Ptynx furciger* McLachlan, Trans. Ent. Soc. Lond., '91, p. 509. Ariz.

### LEPIDOPTERA.

*Albuna modesta* Kellicott, Can. Ent. xxiv, p. 46. Ohio.

### HYMENOPTERA.

*Aulax nabali* Brodie, Can. Ent. xxiv, p. 13. Ontario.

*Cephus occidentalis* Riley and Marlatt, Insect Life, iv, p. 177. Cala.

*Acoloides emertonii* Howard, Insect Life, iv, p. 202.

*Bracon furtivus* Fyles, Can. Ent. xxiv, p. 35.

*Pompilus propinquus* Fox, Trans. Am. Ent. Soc. xviii, p. 339; *P. æneopurpureus*, p. 339; *Salius opacifrons*, p. 340; *Agenia compressa*, p. 340; *Planiceps euferalis*, p. 341; *Epeolus rufoclypeus*, p. 344; *Megachile Martindalei*, p. 344; *M. multidens*, p. 345; *M. pedalis*, p. 347; all from Jamaica.

### ORTHOPTERA.

*Xiphidium Scudderi* Blatchley, Can. Ent. xxiv, p. 26. Indiana.

*Apithes McNeilli* Blatchley, l. c. p. 27. Indiana.

*Pezotettix hoosieri* Blatchley, l. c. p. 31. Indiana.

### DIPTERA.

*Berismyia* n. gen., Stratiomyidæ, Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Aniv. Torino, vi, 108, p. 2, fig. Type *Beris americana* Bellardi.

*Rhopalosyrphus*, p. 3, figs.; *Omegasyrphus*, p. 4, figs.; *Megamepoton*, p. 5, figs., n. gen. Syrphidæ, Giglio-Tos, l. c. Types to be hereafter described.

*Epacmus concinnus, pellucidus, fumosus* Coquillet, Can. Ent. xxiv, p. 9. California.

Tachinidæ: *Siphoplagia* n. gen., Townsend, Trans. Am. Ent. Soc. xviii, p. 349; *S. anomala*, p. 350, N. Mex. *Goniochæta* n. gen., p. 351; *G. plagioides*, p. 352, N. Mex *Tachina spinosula*, p. 353, Ill. *Pachyophthalmus aurifrons*, p. 354, Ill. *Miltogramma flavicornis*, p. 355, Ill. *M. argentifrons*, p. 357, Ill. *M. cinerascens*, p. 358, Ill. *Masicera nigrita*, p. 358, Ill. *M. sordicolor* p. 359, Ill. *Hypertrophocera* n. gen., p. 360; *H. parvipes*, p. 361, N. Mex. *Aphria ocypterata*, p. 361, S. Dak., Minn.? *Exorista ciliata*, p. 363, Ill. *Laccoprosopa* n. gen., p. 365; *L. sarcophagina*, p. 366, Ill. *Frontina acroglossoides*, p. 367, Ill. *Siphona illinoiensis*, p. 368, Ill. *Phasioclista* n. gen., p. 369; *P. metallica*, p. 370, Ill., S. Fla. *Ennyomma* n. gen., p. 371; *E. clistoides*, p. 371, Ill. *Clytia flava*, p. 372, Ill. *Atrophopoda* n. gen., p. 373; *A. singularis*, p. 374, Ill. *Epigrimyia* n. gen., p. 375; *E. polita*, p. 376, Va. *Drepanoglossa* n. gen., p. 377; *D. lucens*, p. 378, N. Mex. *Ceratomyiella* n. gen., p. 379; *C. conica*, p. 380, Ill. *Leucostoma atra*, p. 380, Ill. *Vanderwulpia* n. gen., p. 381; *V. atrophopodoides*, p. 381, N. Mex.

## COLEOPTERA.

*Phanæus Flohri* Nevinson, Ent. Mo. Mag. (2), iii,, p. 33. Jalapa, Mex.

*Agrilus.*—Synoptic table of species and twenty-one new species described, Horn, Trans. Am. Ent. Soc. xviii, 4.

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BITTEN BY A TARANTULA.—Bridgeport, July 20th. As Louis Pastine, a fruit dealer of Main Street, was moving a bunch of banannas at his store, Saturday, a huge tarantula jumped out and stung him on the thumb of the left hand. Pastine ran to the office of Dr. C. W. Fitch, who has lived in Central America, and is an expert on the tarantula. Before he reached the doctor's office the thumb had swollen to twice its natural size. Mr. Pastine says that immediately after the sting the most excruciating pains shot through his arm and both sides. In a moment the pains had penetrated even to his liver, which was seriously affected. Dr. Fitch cauterized the wound, and expects that Mr. Pastine will recover. The Doctor says that the tarantula's bite is not very dangerous, except when it is in an excited condition, and that the one which bit Mr. Pastine was in a rather torpid state. During his fifteen years in Central America he was bitten twenty times by them. He knew how to treat the sting, and attended to it immediately, which is essential. "If," said the Doctor, "you can imagine yourself suffering a pain one hundred times as intense as a wasp sting, you can realize what it is to be bitten by a tarantula. To test the ferocity of the spider, I once cut a round hole in the centre of a newspaper and placed the tarantula in the hole. Then I set fire to the paper, and the insect finding itself hemmed in on all sides, threw its tail over, and stinging itself on the back died instantly."

# REVIEW.

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DIE ZWEIFLUGLER DES KAISERLICHEN MUSEUMS ZU WIEN, V. VORARBEITEN ZU EINER MONOGRAPHIE DER MUSCARIA SCHIZOMETOPA (EXCLUSIVE ANTHOMYIDÆ). PART II. By Prof. Dr. Friedrich Brauer and J. Edlen v. Bergenstamm. Wien, 1891.—I am indebted to the authors for a copy of the above work, which has recently been published. It consists of 140 quarto pages (no plates), and is in continuation of their work begun in Part I, under same title, and published in 1889.* About 100 new genera are erected, and not quite as many new species, these being entirely additional, be it understood, to the new genera and species published in Part I. One can only deplore the lack of order, uniformity and comprehensiveness displayed in the body of the work, which consists entirely of corrections and additions to be interpolated at designated intervals throughout Part I. The genera of other authors have been mercilessly used. Mr. v. d. Wulp's recent genera (published in the Biol. C.-A.) are torn to pieces bodily, and patched up from other quarters. The authors are to be complimented on presenting at the end of their work a systematic list of all the groups, genera and species which they have proposed in Parts I and II. This is put in very comprehensive form, and is followed by a still more convenient index of specific names leading to the genera in which the authors have placed the species, and designating the genera to which the latter were originally referred by their describers. The ruthless deposition of genera, in which the authors indulge, should not be countenanced. *Echinomyia* is decapitated, and *Tachina* installed in its place. *Eutachina* is created to fill the vacancy thus left by *Tachina*. Numerous new genera are erected on trivial or insufficiently designated grounds, at the expense of former well-to-do ones; or genera long ago abandoned are raised from a condition of comparative obscurity, and made to supplant those which have long been in use. Why the generic term *Latreillia* should be preferred to *Belvosia*, when both were described on adjoining pages by the same author in 1830, is beyond explanation, and especially when we consider the time-honored usage of *Belvosia*, and the fact that *Latreillia* was proposed by Roux, in 1827, for a genus of Crustacea. The name *Metopodia* is applied to a new genus; this is apt to become confused with *Metopodus* Am. Serv. (Hem.) or with *Metapodius* Westw. (Hem.) If the genus be a valid one, I would propose the use of the term NEOMETAPODIA for it. As nearly as I can form an opinion, without actually cataloging and classifying all the names, the new genera and species proposed (usually insufficiently characterized) are divided geographically as follows: N. Am. gen. 25, spp. 17; So. Am. gen. 18, spp. 18; Extra Am. gen. 59, spp. 61. If the authors would present full descriptions, properly and systematically arranged, of their new genera and species, their work would be much more comprehensive and productive of good. As it is, their labors can scarcely be appreciated by one who has not access to the collections in the Museum in Vienna.—C. H. T. TOWNSEND.

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* For a notice thereof by Dr. Williston, see ENT. NEWS, vol. i, p. 77.—ED.

A REGULAR MEETING OF THE ENTOMOLOGICAL SECTION OF THE A. N. S. was held at the Hall Jan. 28, 1892. Dr. Horn, Director, presiding. Dr. Horn donated to the cabinet a number of Mexican Coleoptera. Mr. Calvert presented the second installment of European Odonata, numbering 29 specimens. Mr. Nell presented a specimen of Odonata new to the collection. Mr. Martindale called attention to a paper by Dr. W. J. Holland on a peculiar Lycænid chrysalis from Africa, which had a Simian aspect. Dr. Horn mentioned a paper he had recently written, on some variations in the markings of Coleoptera, and spoke of some interesting points brought out. Dr. Skinner exhibited a pair of *Parnassius smintheus* showing interesting variation from the normal. Mr. Martindale spoke of a method of preparing naphthalin cones by heating the head of a pin and thrusting it into the fused balls to be obtained at the druggists'; they are clean, leave no débris, and cost about five cents per hundred. Mr. Calvert stated that the dragonfly presented by Mr. Nell was *Gomphus dilitatus*, and was caught in the streets of the city in May, 1891; it is a Southern species, and he had never heard of its being found before in this locality.

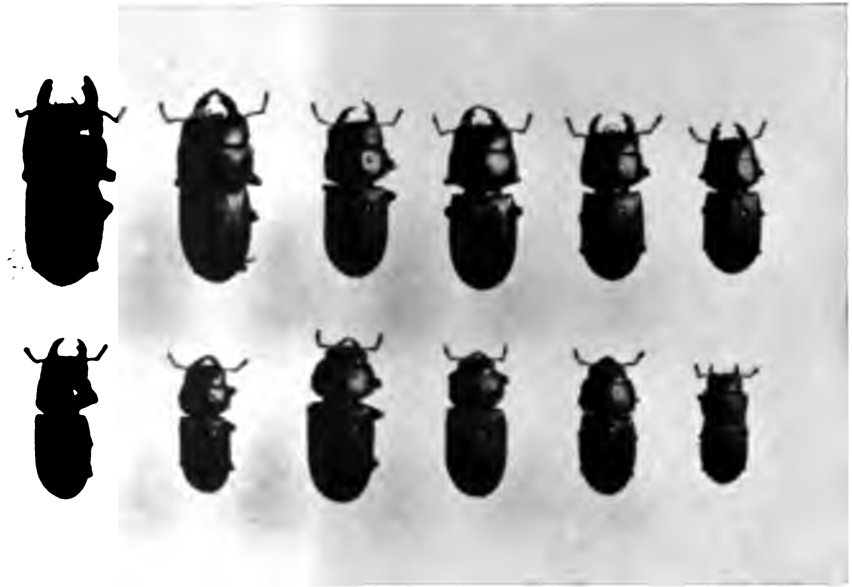
# OBITUARY

HENRY WALTER BATES, F.L.S., F.Z.S., etc., died in London, February 17th. In this death England loses one of her ablest entomologists. Beginning in 1848 his entomological contributions have been continued, with interruption only during his long sojourn on the Amazons, until very recently. His studies were limited to the Lepidoptera-Rhopalocera, and to three large and difficult families of Coleoptera: Carabidæ, Scarabæidæ and Cerambycidæ, in all of which he had accumulated much material, especially rich in Amazon species. His industry and ability are well shown in the volumes with their supplements in the "Biologia Centrali-Americana" on his favorite families. His narrative of his sojourn on the Amazons is filled with notes showing his acuteness of observation in the field. For many years he has filled the position of Assistant Secretary of the Royal Geographical Society. Those who knew him personally will mourn the loss of a cultured man, a kind friend, and a genial companion.

## ERRATA.

On page 5, line 9, for 35 mm. *read* .35 mm.
" 5, line 18, for 6.5 mm. *read* .65 mm.
" 5, line 24, insert a comma (,) after joints 5 and 12.
" 5, line 24, for trifle, *read* triple.

ENTOMOLOGICAL NEWS for February, was mailed January 29, 1892.



DORCUS PARALLELUS.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

Vol. III. APRIL, 1892. No. 4.

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## **Dorcus parallelus** Say.

By Geo. H. Horn, M. D.

The plate forming the frontispiece of this number has been prepared from material which, for the most part, belongs to the American Entomological Society. The reasons for presenting it are : to settle finally the relationship existing between the names *parallelus*, *costatus* and *brevis*, now in our lists—to illustrate the possibilities of variation in form and sculpture, and, finally, to ascertain by experiment the adaptability of the various photo-plate processes for illustrations taken from the objects themselves. Periodically the question is discussed, what is *Dorcus brevis*, and is it distinct from *parallelus?* It need hardly be said that this question arises principally among those young in experience and with small series, although species are frequently described as new with far less claim to distinctness than the extreme specimens on the upper row. *D. brevis* is founded on males of full development, broad thorax and smooth surface. The first two figures accurately represent Say's idea. As a rule the males have quite a smooth thorax, while the females are rather closely punctate. In the *brevis* form the elytra are also quite smooth, but the transition from this to the striate sculpture is gradual, and can readily be traced even in the plate. *D. costatus*, although merely a catalogue name, is based on those females in which three of the intervals on each elytron are a little wider and more prominent, as faintly shown on the fifth figure in the second row. The terminal figure is an exceptionally small female collected by Mr. Henry Wenzel. The six specimens on the upper row and two on the lower are males, as will be known by the more prominent mandibles with a tooth on the upper side. Regarding the possibilities of variation, the plate shows for itself, although far less than the specimens themselves, and *Dorcus parallelus* is by no means a good species for the illustration of varietal possibilities. The use of any photographic method usually causes a loss of some detail, but when form alone is to be illustrated more accurate results for comparison can be obtained.

## IN ALASKA.

By W. G. WRIGHT, San Bernardino, Cal.

One might suppose that a trip to Alaska would afford an entomologist abundant material for collecting, and that he might write a book about what he saw through his entomological glasses, and experienced in pursuit of his pet hobby. But having made the trip, I am obliged to say that the results, both actual and theoretical, were very meagre.

To begin with, the country from the Strait of San Juan de Fuca to Yakatat Bay is all of a piece. The ground is all solid rock, if I may so speak, islands and mainland alike, and the channels through which the steamer sails most of the way are mere cracks in the hard, black rock, some of them so deep that it is impracticable to anchor in them. How a tree can manage to find root-hold upon such solid rock is a continual mystery, but they do, and the whole country, whether level or side-hill (and most of it is tilted up an angle frequently acute), is covered with the same endless ranks of sombre fir trees, the very sight of which at length becomes a weariness; and the trees, with horizontal limbs down to the ground, come clear down to the water's edge, so that a landing becomes a difficulty. The Japan current, or some other cause, gives to Sitka about the same temperature as at Victoria. To that current the whole coast from Yakatat Bay to the Columbia River owes a liberal allowance of fog and misty rain, more at the North and less at the South, but otherwise the thousand miles of northing from Puget Sound gives no notable climatic difference. Therefore, it is easy to see that, with the same geological formation, the same flora, and the same climate, the same fauna must prevail; and so I have found it. So far as my insect captures are determined I did not get a specimen in Alaska but what is found about Puget Sound in greater abundance than in Alaska. One *Pieris*, from Sitka, bears another name from those of Puget Sound, but I regard it as the same species; I will "lump" that much. The country inland is well-nigh impenetrable, being, as I have said, mostly up edgewise, and sometimes almost to the perpendicular, and densely wooded; and underneath, a network of fallen trees thickly covered with sphagnum or moss, which apparently never gets dried out, because of the rain and the dense shade. Five miles a day is good traveling through these thickets. There are no clearings or ranches, or farms; no room for a butterfly to stretch its wings. In Coleoptera it is as bad. I got one *Cychrus marginatus* at Metlakahtla, and one at Loring, and a pair of *C. angusticollis* at Junean, but nothing of interest anywhere.

Wrangel is a green spot in my memory, because there I got my first Alaskan butterflies. To be sure they were only a common *Pieris*, but it is noteworthy to get any butterflies in such a rainy country. These poor Pierids were nearly starved by the long season of rain, and were crawling about upon an umbel of *daucus* trying to feed; they could not fly, because of the rain, so I picked them off the flowers with my fingers, and took them in out of the wet. Numbers of little geometrid moths were flying about, but I had no net out in the rain, so I did not get them. I met here, by chance the usual way, an eastern naturalist who was skinning birds. He told me that he had seen in the vicinity one specimen of *Limenitis Lorquini*. From that item we may set down Fort Wrangel as the northern limit of that species.

About the town of Junean I caught a lot of Pierids, of the same old species, but no other butterfly was seen. Then I followed a mining road out into the country as far as time would permit, but found nothing else. By the roadside lay some pine blocks left by the axe-men. Under one of these I found the fine pair of *C. angusticollis* before spoken of, but no other beetles worth naming.

Chillkat is the most northern of all the stopping places on this Alaskan route; it is close to the 60th degree of North latitude. Here is a narrow grassy border along a moraine, and at the shore line, and I forthwith went ashore with my net. A half dozen Pierids were taken and then came a lull. Presently I began to sweep the grass for beetles, and lo! some Pterophoridæ. So I spent most of the time in getting that little thing, of which there seemed to be several species. This was the most unexpected find of the whole trip.

At Sitka I remained sixteen days, seven of which were mostly sunny, a remarkable thing, as the people told me, as sunny days are exceptional there. One species of *Pieris* was common about the streets, *P. Bryonæ*. One gentleman excited my curiosity by saying that the real Japan silk-worm moth was found there, and so one day he showed me the "moth" flying about his cabbage plants; it was this *Pieris*. I was also informed that this same butterfly was found all along the vast chain of Aleutian Islands, nearly to Siberia, in great numbers; that it feeds on honey-dew, which is found on the leaves and twigs of Alder bushes, and that he had seen the bushes white from the abundance of the butterfly; all of which is credible. But about Sitka I found butterflies very scarce. Beside this *Pieris*, I got only one other species, *Chryso. helloides*, small in size, and almost black. The female, especially, was so dark I could hardly believe it was that species, but the male was rather more like the Southern form, and showed the violet gloss faintly [*Chrys. florus?*—Ed.]

Near Sitka, a few miles back, is a mountain, Mt. Verstovia, 3600 feet high. One fine day I climbed this mountain to above timber line; here, at 3500 feet altitude, to see if a *Parnassius* or a *Chionobas* could not be found. Upon the alpine slopes above timber line was a most lovely butterfly place. Some old snowbanks yet remained here and there, but on many of the drier slopes grass and flowers grew luxuriantly, and the air was so mild, and the sun shone so delightfully, that it seemed as if there must be a dozen *Parnassius'* in sight at any moment, but not one did I see; not a butterfly of any color. I never felt so disgusted and discouraged in my life before. I just gave a big growl of displeasure, and threw down my net and other butterfly traps in anger, and went off to a snow-bank and ate snow, and tried to eat the waxen white blossoms of a heather which grew all about; but it all didn't pay, so I came back to where the guide was lolling on a dry bank by a spring, and ate lunch with him instead. After that I felt better, but not to this day have I regained my serenity of mind as to the outcome of that day's work. Every thing was so favorable, so promising, and the possibilities so great, and not even one poor little butterfly to bless myself with; it was too bad.

North of the great chain of Aleutian Islands, about Norton Sound, and even north of Bering Strait, and under the icy zone of the Arctic Circle, at Kotzebue Sound, it appears that more butterflies are found than at Sitka, because the islands deflect the Japan current to the east and south, so that the more northern regions mentioned are more free from the fog and rain than Sitka is. But even Kotzebue Sound is not a good field for the entomologist, and if any enthusiast should desire to go there, my advice would be, "don't."

## Preparatory Stages of Pamphila manataaqua.

By PHILIP LAURENT, Phila., Pa.

On June 24, 1891, I secured two female *Pamphila manataaqua*, which I placed in a small cage containing a piece of grass sod; during the night nine eggs were laid. The eggs are hemispherical in shape, excepting that the apex is somewhat flattened. In color the eggs are of an opaque-white with a greenish tinge. When observed with the naked eye the egg appears to be smooth, but observed through a glass of ordinary power it will be seen that the egg is covered with minute depressions. On July 8th the young larvæ emerged from the egg. The larvæ are slender and more cylindrical than those of most *Pamphila*. In color they are the same as the egg, excepting the head, which is of a dark brown color. The head, when observed through a strong glass, is found to have a corrugated appearance. On the upper part of first segment immediately back of the head, a narrow band of dark brown is observed. July 25th: Larvæ are now about a half inch in length; the body is of a dark or oil-green color, while the head still remains brown, but of a lighter shade than when first observed.

August 2d: Larvæ are now about three-quarters of an inch in length. On examining the larvæ with a strong glass, it will be seen that the larvæ are covered with numerous irregular spots of a dark lavender color; the body is also seen to be thinly covered with hair, that on the sides of larvæ being somewhat longer than that on the top.

August 13th: Larvæ are now full grown, and are about one inch in length. In appearance there has been but little change since August 2d, excepting in the fore feet, which are now dark brown instead of light brown.

August 14th: The first larva changed to chrysalis to-day. The chrysalis is of a greenish white color, the space occupied by head and thorax, and wing-cases being somewhat darker than the abdomen. The eye space is very prominent; the tongue case is of a light brown color and extends almost to the tip of abdomen. The chrysalis is fastened among the grass stalks, and is dusted over with a white silky powder.

Aug. 20th: The last of the larvæ changed to a chrysalis to-day.

August 29th: The first imago emerged to-day a male.

August 30th: Another male appeared.

September 1st, two males; September 2d, one female; September 3d, one male. The others are probably dead.

At no time was I able to discover the exact time of moulting, or could I ever find any of the remains of cast-off larva skins; it may be that the larvæ devour the cast-off skins, but of this I am not certain, so much of their life is spent in the little grass houses that they construct for themselves, that it is hard to keep an eye on them at all times. I thought perhaps the moulting took place within these houses, but was never able to find any cast-off skin within them.

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## Notes on the Life-history of Calpodes ethlius.

By T. D. A. Cockerell, Kingston, Jamaica.

Mr. Scudder, in his "Butterflies of New England," p. 1750, gives an interesting account of this species; a description of the mature larva and pupa has also been published by the present writer in the "Journal of the Institute of Jamaica," No. 1, p. 29. Mr. I. I. Bowrey has kindly supplied me with eggs found on *Canna* in his garden in Kingston, from which I have obtained the young larvæ. Very many of the eggs never produce larvæ, but fall victims to a small hymenopterous parasite. This was first observed by Mr. Bowrey, and is specially interesting, because hitherto no parasite of *C. ethlius* seems to have been recorded. I have not very carefully examined these egg parasites, but they are evidently of the genus *Trichogramma*, or closely allied thereto. A specimen, compared with Riley's figure of *T. pretiosa*, has a broader head, and the thorax is larger in proportion to the abdomen (my specimen is probably a male); the upper wings are apparently more truncate, and the lower seem more slender. With the *Trichogramma* I found a broken specimen of a different Chalcid, with a broad abdomen about a third longer than wide, a thorax much the same size and shape, wings stretching considerably beyond the tip of the abdomen, submarginal vein rather stout, marginal curved away from the costa, stigmal long, with a distinct, though small knob, last pair of legs very long, stretching beyond the tips of closed wings. These notes, although so fragmentary, may serve for comparison with parasites of *C. ethlius* that may be found elsewhere. Certainly, these egg parasites do much towards keeping down the *Canna* butterfly in Jamaica. The *Trichogramma* is the important one; whether the other species is common remains to be seen. Eggs of *C. ethlius* brought to me by Mr. Bowrey on Oct. 24, 1891, were laid singly on a leaf of *Canna.** They are, as stated by Dr. Wittfield, plainly visible. The egg is rounded, in section forming rather more than half a circle, smooth, shiny, opaque, with fine impressed microscopic punctures or lines, but no ribs. Diameter 1¼ mm., color white, with a purple-gray tinge, especially above. The egg-shell is white after the exclusion of the larva. The lately-hatched larva is 4 mm. long, and rests on the underside of the leaf, near the edge, which it bends by spinning a transverse thread 4 mm. long. It is pale green (Scudder says pale yellowish brown) with a black shiny head, which has a deep longitudinal sulcus on the crown. Thoracic shield black; body with only a few very short and inconspicuous hairs. The shape is cylindrical, with a large head; different from *P. zabulon* as figured by French. On November 3d the larva was 13 mm. long, cylindrical, looking

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* On the same leaf I found the eggs of an unknown moth; these are smaller, and laid in a group of eighty or more, very regularly in rows, equidistant, no two eggs touching, They have about twenty-four well-marked ribs. The larvæ proved to be looping Noctuids, but the imago was not reared.

quite like a Pyralid. Head now brown instead of black, but the narrow thoracic shield black; body pale glaucous-green; dorsal vessel showing as a darkish line. Each segment has several transverse grooved striæ or wrinkles dorsally. There is very little variation in the imago so far as Jamaican examples are concerned. In a series obtained by Mr. Bowrey I find the expanse varying from 53 to 61 mm. The largest vitreous spot on the fore-wing is often subquadrate, as described by Scudder, but often elongate, considerably longer than broad. Mr. Scudder calls this "The Brazilian Skipper," but the *Canna* butterfly, or *Canna* Skipper, would be a more appropriate name.

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## NEW NORTH AMERICAN TACHINIDÆ.

By C. H. Tyler Townsend, Las Cruces, N. Mex.

The following are descriptions of South Florida and Jamaica forms, collected respectively by Mr. Charles Robertson, of Carlinville, Ill., and Mr. Charles W. Johnson, of the Wagner Institute, Philadelphia.

**Blepharipeza nigrisquamis** n. sp. ♂.—Eyes brown; frontal vitta blackish brown; face, cheeks, and sides of front silvery white pollinose, darker in some lights; facial ridges bristly half way up, sides of face bare, except for descending frontal bristles; antennæ and arista black, third antennal joint about three times as long as the somewhat elongate second; proboscis black, labella large, brown; palpi rather stout, bristly, rufous, blackish at base; occiput silvery, gray-hairy. Thorax purplish black, faintly silvery pollinose, with four narrow black vittæ interrupted at suture, the outer pair more so than the inner pair; scutellum black, very bristly. Abdomen wholly dense black, with a bluish or purplish reflection, thickly set with macrochætæ. Legs black, claws and pulvilli a little elongate, pulvilli tawny. Wings grayish hyaline, broadly and abruptly black at base; tegulæ and alulæ black, halteres brownish. Length of body, 9 mm.; of wing, nearly 9 mm.

Described from one specimen; Portland, Jamaica, April (C. W. Johnson). This species differs from *B. leucophrys* in its smaller size, blacker bases of wings, and somewhat stouter palpi.

**Pachyophthalmus floridensis** n. sp. ♂.—Eyes brown; frontal vitta nearly black, velvety, narrow, about one-third width of front, front about one-fifth width of head; frontal bristles in double row; sides of front, face, and cheeks silvery whitish, with slight brassy tinge on front; vibrissæ distinct, decussate; antennæ black, third joint hardly one and a half times as long as second, arista black; proboscis brownish, palpi blackish; occiput cinereous. Thorax and scutellum silvery cinereous, with three broad black vittæ, which are continued over scutellum. Abdomen shining black, anal segment rufous, whole abdomen clouded with silvery cinereous, giving the appearance of three broad, irregular, blackish vittæ, interrupted at the sutures; first two segments with a lateral pair and a median marginal pair of macrochætæ, third and anal with a marginal row. Legs black, femora silvery cinereous, claws and pulvilli short. Wings slightly grayish, nearly hyaline; tegulæ whitish, halteres light brownish. Length of body, 5 mm.; of wing, 4 mm.

Described from one specimen; So. Florida (Robertson).

**Miltogramma decisa** n. sp. ♀.—Eyes reddish brown; front brassy golden; less than one-third width of head, the frontal vitta nearly obsolete in front; two orbital bristles; face and cheeks pure silvery white; antennæ pale rufous, third joint one and a half times as long as second, arista blackish; vibrissæ distinct, decussate; proboscis black, palpi rufous (so far as can be seen); occiput cinereous, short and sparsely bristly. Thorax cinereous, silvery pollinose, with three narrow median vittæ and a heavier outside one; scutellum more or less cinereous. Abdomen shining black, first segment on sides and second segment entirely, except triangle in middle, rufous; bases of segments two to four silvery white pollinose; first segment without macrochætæ, second with a median marginal pair, third with a lateral pair and a median marginal pair, and with a marginal row. Legs black, front femora silvery on outside, claws and pulvilli very short. Wings grayish hyaline, tegulæ white, halteres brownish. Length of body, 4⅓ mm.; of wing, 3½ mm.

Described from one specimen; So. Florida (Robertson).

**Anisia vanderwulpi** n. sp. ♂ (?).—Eyes cinnamon brown; frontal vitta velvet blackish brown; sides of front and orbital margins of occiput brassy golden; two orbital bristles; face and cheeks silvery white; antennæ rufous, the third joint brownish distally and on front edge, arista brownish; proboscis brownish, short, fleshy, labella large, pale tawny, palpi pale tawny; occiput silvery, gray-hairy below. Thorax silvery white pollinose, with four blackish vittæ, the outer ones heavier and interrupted at suture, humeri and pleuræ silvery white; scutellum silvery white pollinose. Abdomen black, more or less silvery white pollinose, but particularly so at bases of segments and more broadly on vertex, terminal portion of anal segment pale rufous; first two segments with a lateral macrochætæ and a median marginal pair, the second segment with a median discal pair also; third with a median discal pair, and a marginal row of about ten; anal segment with a marginal and discal row of about eight, those in discal row strongest. Legs black, coxæ and distal inferior half of femora light rufous, femora more or less silvery; claws and pulvilli short, pulvilli whitish. Wings grayish hyaline, tegulæ transparent like isinglass, halteres yellow. Length of body, 6 mm.; of wing, 5½ mm.

Described from one specimen; Portland, Jamaica (C. W. Johnson).

(To be continued.)

# ELEMENTARY ENTOMOLOGY.

## LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

The first of the Heterocerous families is the Sphingidæ. This family comprises moths of rather large size, the thorax robust, the abdomen elongate and tapering in most cases, and usually considerably exceeding the anal angle of the secondaries. The head is well developed as a rule, and the antennæ are usually fusiform and more or less prismatic; that is to say, they are rather thicker in the middle and taper both to base and tip, more so toward the tip, which is generally furnished with a little recurved hook. The prismatic shape is usually quite marked in the species, and is a peculiarity of the family. The primaries, or fore-wings, are rather long and narrow in most cases, often more or less evidently lanceolate, the secondaries or hind wings proportionately quite small and narrow. As a whole, the wings are small, compared with the bulk of the insect. The venation throughout the family is quite constant. The primaries may have eleven or twelve veins, according as 9 is, or is not branched near its tip. The entire subcostal series is crowded closely to the costa, so that it is difficult to follow the course of all after vein 7. Vein 5 is nearly midway between 4 and 6, and the cell is closed in those species known to me. Vein 1, the submedian or internal vein, is furcate at base.

On the secondaries the costal and subcostal arise independently from the base and run separately to their termination, joined, however, near the base by an oblique cross-vein, which is characteristic of the family. Here also vein 5 is from near the middle of the cross-vein, and there are two internal veins.

The larvæ of the Sphingidæ are as easily recognizable as the imagos by the curved spine or horn on the top of the terminal segment. In the species in which this horn is wanting there is a shiny tubercle or knob, occupying the position of the more usual process. The pupation is subterranean in most cases.

Compact as is the family in general appearance and main structural features, it divides readily into a number of well marked subfamilies.

The Macroglossinæ are easily distinguished by the rather obviously clubbed tip of the antenna. They retain their prismatic form and the little recurved hook, but are not fusiform. This subfamily contains the clear-winged forms, *Hemaris*, and a small series of opaque-winged species which have short, broad fore-tibiæ, armed at tip with long stout claws, *Lepisesia*. The species are largely diurnal in habit, flying swiftly in the bright sunshine and hovering over the flowers, on the nectar of which they feed. The tongue is well developed, and often nearly as long as the insect itself.

The Chœrocampinæ have the antennæ more or less distinctly fusiform, and the tongue well developed, often longer than the body. There is a tendency to a bright, banded maculation, the abdomen is often tufted, and the fore-wings have the outer margin sinuate or angulate. In *Enyo* the thorax also is crested. It is in this family that the larvæ often have a knob or tubercle instead of the usual horn. Many of the species are diurnal, as in the preceding subfamily, and they are often as swift of flight.

The Sphinginæ all have fusiform antennæ, and usually a long tongue. In some of our species this organ is from six to eight inches in length, and from that it dwindles until it becomes obsolete in *Ellema*. The fore-wings are narrow and lanceolate, and the markings are longitudinally strigose, not banded. They are usually crepuscular, flying at twilight, and from their darting motions and their habit of hovering over the food-plant, the term "Hawk Moths" has been derived.

The Smerinthinæ are quite different in many respects. The tongue is obsolete, unless for feeding in all forms, the antennæ are often serrated, and sometimes pectinated, and the primaries are often quite broad and usually angulated or dentate. In *Cressonia* the male antennæ have two branches to each joint, as in the Saturniidæ.

A brief statement of subfamily differences is as follows .

Antennæ distinctly clubbed at tip . . . . . . **Macroglossinæ.**
Antennæ not distinctly clubbed, usually fusiform.
  Tongue long and strong.
    Primaries with outer margin sinuate or angulate . **Chœrocampinæ.**
    Primaries with outer margin even . . . . . **§ Sphinginæ.**
  Tongue weak and short.
    Primaries with outer margin even . . . . . **§ Sphinginæ.**
    Primaries angulated or dentate . . . . . . **Smerinthinæ.**

# TWO NEW SPECIES OF COLEOPTERA.

By G. W. J. ANGELL.

**Corymbites Weidtii** sp. nov.—Elongate oval, dark metallic bronze, with greenish or crimson lustre; third joint of antennæ shorter and narrower than fourth. Head strongly and densely punctate, with an occipital fovea. Thorax very convex and distinctly, but not closely punctured; anterior angles broadly rounded, sides sinuate, posterior angles strongly produced and divergent. Elytra at base slightly narrower than thorax; one-half longer than wide, greatest width anterior to apical third; sides regularly curved to apex, margin distinct and rather strongly reflexed posteriorly; striæ regular and distinct, more deeply impressed at base; intervals irregularly, rather densely punctured, punctures confluent or linear, giving a strigate appearance in some lights. Abdominal segments shining golden green, punctate; punctures rather dense at sides, sparse at middle.

♂.—Ventral segments more coarsely punctured; third and fourth segments with large, but rather shallow foveæ near elytral margin.

♀.—Ventral segments more finely punctured; a small but deep fovea on either side of third ventral near posterior angles of segment. Length 11 mm.

Cascade Range, British Columbia; altitude 7000 feet. This species, by the structure of the antennæ, naturally falls into Group III of Dr. Horn (Trans. Am. Ent. Soc. vol. iii, p. 319). It is one of the many interesting captures of Mr. J. C. Weidt.

**Elmis columbiensis** sp. nov.—Elongate oval, shining black, sparsely pubescent. Thorax subquadrate, slightly wider than long, narrowed at front; arcuate and divergent to middle, then subparallel to base, which is strongly sinuate and slightly emarginate at middle; disc sparsely, but distinctly punctured, more densely toward margin; basal lines attaining the middle and limited by two densely punctured foveæ on either side of impressed median channel. Elytra at base slightly wider than thorax, humeri rounded, sides subparallel to apical third, then slightly sinuate and convergent to apex, which is broadly rounded and subtruncate. Elytral striæ deeply impressed, punctures large and rather distinct, intervals very feebly and finely punctate; fifth, sixth and seventh intervals costate. Elytral margin slightly testaceous; ventral segments feebly, but densely punctate, rather densely pubescent at sides. Legs dark testaceous, finely and lightly punctured. Length 2.6 mm.

Fraser River Valley, British Columbia; Mr. C. J. Weidt.

A truly dainty sportsman he,
  The fields he never tries;
He takes scent bottles 'neath a tree
  And squirts at butterflies.—*New York Herald.*

# NOTE ON THE HABITS OF AMMOPHILA.

By S. W. Williston, Lawrence, Kans.

Even the casual observer, to whom all insects are bugs, cannot help but be struck by the great diversity and number of the fossorial Hymenoptera of the plains. Water is often inaccessible, trees there are few or none, and only in places is the vegetation at all abundant. A much larger proportion of insects, hence, find it necessary to live or breed in holes in the ground, than is the case in more favored localities. Especially is this the case with the Hymenoptera, great numbers and many species of which thus breed in excavations made by themselves.

While packing specimens on an open space, uncovered by buffalo grass, in the extreme western part of Kansas, the early part of last July, the attention of a friend and myself was attracted by the numerous wasps that were constantly alighting upon the ground. The hard, smooth, baked surface showed no indications of disturbance, and it was not till we had attentively watched the insects did we learn what they were doing. The wasp is a very slender one, more than an inch in length, with a slender, pedicellate abdomen; it is known to entomologists as *Ammophila Yarrowi* Cres. They were so numerous that one was distracted by their very multiplicity, but, by singling out different individuals, we were enabled to verify each detail of their operations. An insect, alighting, ran about on the smooth, hard surface till it had found a suitable spot to begin its excavation, which was made about a quarter of an inch in diameter, nearly vertical, and carried to a depth of about four inches, as was shown by opening a number of them. The earth, as removed, was formed into a rounded pellet and carefully carried to the neighboring grass and dropped. For the first half of an inch or so the hole was made of a slightly greater diameter. When the excavation had been carried to the required depth, the wasp, after a survey of the premises, flying away, soon returned with a large pebble in its mandibles, which it carefully deposited within the opening; then, standing over the entrance upon her four posterior feet, she (I say she, for it was evident that they were all females) rapidly and most amusingly scraped the dust with her two front feet, "hand over hand," back beneath her, till she had filled the hole above the stone to the top. The operation so far was remarkable enough, but the next procedure was more so. When she had heaped up the dirt to her satisfaction, she again flew away and immediately returned with a smaller pebble, perhaps an eighth of an inch in diameter, and then standing more nearly erect, with the front feet folded beneath her, she pressed down the dust all over and about the opening, smoothing off the surface, and accompanying the action with a peculiar rasping sound. After all this was done, and she spent several minutes each time in thus stamping the earth so that only a keen eye could detect any abrasion of the surface, she laid aside the little pebble and flew away to be gone some minutes. Soon, however, she comes back with a heavy flight, scarcely able to sustain the soft green larva, as long as herself, that she brings. The larva is laid upon the ground, a little to one side, when, going to the spot where she had industriously labored, by a few rapid strokes she throws out the dust and withdraws the stone cover, laying it aside. Next, the larva is dragged down the hole, where the wasp remains for a few minutes, afterwards returning and closing up the entrance precisely as before. This, we thought, was the end, and supposed that the wasp would now be off about her other affairs, but not so; soon she returns with another larva, precisely like the first, and the whole operation is again repeated. And not only the second time, but again and again, till four or five of the larvæ have been stored up for the sustainment of her future offspring. Once, while a wasp had gone down the hole with a larva, my friend quietly removed the door stone that she had placed by the entrance. Returning, she looked about for her door, but not finding it, apparently mistrusted the honesty of a neighbor, which had just descended, leaving her own door temptingly near. She purloined this pebble, and was making off with it, when the rightful owner appeared and gave chase, compelling her to relinquish it.

The things that struck us as most remarkable was the unerring judgment in the selection of a pebble of precisely the right size to fit the entrance, and the use of the small pebble in smoothing down and packing the soil over the opening, together with the instinct that taught them to remove every evidence that the earth had been disturbed.

# Lepidoptera of the Adirondack Region of the State of New York.

By CHAS. S. MCKNIGHT, Saratoga Springs, N. Y.

The late W. W. Hill, of Albany, N. Y., made extensive collections of Lepidoptera in Lewis County in this State, and lists of his captures are to be found in several publications.[*]

In addition to those therein enumerated I would add the following species taken by myself at Saranac Lake, Franklin Co., N. Y.; elevation, 1500–1600 feet. Light and sugar were both employed. In the early Spring, while the ground was still covered with snow, many of the hibernating forms were taken in sugar camps at rest on the trees or from the sap pails.

Thyreus Abbotii *Swains.*, light, July. Sphinx kalmiæ *S.* & *A.*, light, July. S. drupiferarum *S.* & *A.*, light, June. S. gordius *Cram.*, light, July. S. luscitiosa *Cram.*, rare, July. Ellema coniferarum *S.* & *A.*, larvæ, September. Alypia octomaculata *Hbn.*, bred, June. A. Langtonii *Coup.*, rare, June. Eudryas grata *Fab.*, light, July. Clemensia albata *Pack.*, light, June. Lithosia candida *Hy. Edw.*, light, July. Crocata brevicornis *Walk.*, light, July. C. rubicundaria *Hbn.*, light, July. Arctia virguncula *Kby.*, light, July. Adoneta spinuloides *H. S.*, light, June. Ichthyura inclusa *Hbn.*, light, June. Gluphisia trilineata *Pack.*, rare, light, July. Notodonta stragula *Grt.*, light, June. Phœsia rimosa *Pack.*, rare, light, July. Cœlodarys biguttata *Pack.*, light, July. Lophopteryx elegans *Strk.*,[†] ♂, light, June. Heterocampa manteo *Doub.*, rare, light, June. H. biundata *Walk.*, light, June. H. cinerea *Pack.*, light, June. Samia cecropia *Linn.*, bred, June. Telea polyphemus *Cram.*, bred, June.

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[*] Thirteenth Annual Report of the N. Y. State Museum of Natural History, 1879.
Seventh Annual Report on the Topographical Survey of the Adirondack Region of the State of New York, Colvin—Albany, 1880.
"Papilio," iii, p. 27.

[†] Determined by H. Strecker. In Prof. J. B. Smith's "Check List," 1891, ***Notodonta notaria*** Hy. Edw. (described in "Entomologica Americana," i, p. 17) taken in Colorado by David Bruce, is given as a synonym of the above. In the Colorado specimens the primaries are described as being of an "even mouse color." In the Adirondack example they are suffused from base to subterminal space and below apex, with brownish fawn, darkest along the costa and gradually fading toward the outer margin into the color of the western form. I am unaware of any previous report of the capture of this species in the east.

## NOCTUIDÆ.

Leptina Doubledayi *Gm.*, light, June. L. ophthalmica *Gm.*, light, June. Demas flavicornis *Smith*, light, June. Momophana Comstockii *Grt.*, light, May 19. Agrotis attenta *Grt.*, light, July. A. ochrogaster *Gn.*, sugar, July and August. A. cinereomaculata *Morr.*, sugar, July and August. A. lubricans *Gn.*, sugar, August. A. velleripennis *Grt.*, sugar, August. A. alternata *Grt.*, sugar, August. A. badinodis *Grt.*, sugar, July and August. A. catharina *Grt.*, sugar, August. A. salicarum *Walk.*, at sap, April. Barathra curialis *Smith*, light, June. Hadena ducta *Grt.*, sugar, July. H. fimbrina *Gn.*, sugar, August. H. fractilinea *Grt.*, sugar, August. H. impulsa *Gn.*, sugar, August. Oligia arna *Gn.*, sugar, August. Dipterygia scabriuscula *Linn.*, sugar, August. Tricholita semiaperta *Morr.*, sugar, August. Helotropha reniformis *var.* atra *Grt.*, sugar, June. Arzama diffusa *Grt.*, sugar, June. Platysenta atriciliata *Grt.*, sugar, July. Tæniocampa alia, sap pails and sugar, April and September. T. subterminata, sap pails and sugar, April and September. T. peredia, sugar, September. Homoglæa hircina *Morr.*, sugar, April. Himella thecata *Morr.*, sugar, September. Scopelosoma Pettiti *Grt.*, sap pails and sugar, April and September. S. Morrisoni *Grt.*, sap pails and sugar, April and September. S. devia *Grt.*, sap pails and sugar, April and September. S. Walkerii *Grt.*, sap pails and sugar, April and September. S. lidus *Gn.*, April and September. Scoliopteryx libatrix *Linn.*, sugar, June. Xylina Bethunei *G. & R.*, sap pails, April. X. laticineria *Grt.*, sap pails, April. X. fagina *Morr.*, sap pails, April. X. Thaxteri *Grt.*, sap pails, April. Morrisonia vomerina *Grt.*, sugar, June. Calocampa curvimacula *Morr.*, sap pails, April. C. cineritia *Morr.*, sap pails, April. C. cineritia *var.* thoracica *Put.-Cram.*, April. Crambodes talidiformis *Gn.*, sugar, July. Aletia argillacea *Hbn.*, sugar, July. Abrostola urentis *Gn.*, sugar, August. Plusia striatella *Grt.*, light, July. Alaria florida *Gn.*, light, July. Erastria apicosa *Harv.*, sugar, July. Euclidia cuspidia *Hbn.*, sugar, June. Syneda graphica *Hbn.*, light, July. S. adumbrata *Behr.*, light, July. Homoptera [illegible] lunata *Dru.*, sugar, August. H. unilineata *Grt.*, sugar, August. H. Woodii *Grt.*, sugar, September. Catocala gracilis *Edw.*, sugar, August. C. retecta *Grt.*, sugar, August. C. antinym[illegible]

*Hbn.*, sugar, August. C. piatrix *Grt.*, sugar, August. Parthenos nubilis *Hbn.*, sugar, August. Pseudanthrœcia coracias *Gn.*, sugar, September. Argillophora furcilla *Grt.*, sugar, September. Homopyralis discalis *Grt.*, sugar, August. Pangrapta decoralis *Hbn.*, sugar, June. Pityolita pedipalalis *Gn.*, light, July. Philometra longilabris *Grt.*, light, July. Megachyta lituralis *Hbn.*, light, July. Spargaloma sexpunctata *Grt.*, light, July. Capis curvata *Grt.*, light, July. Herminia morbidalis *Gn.*, light, August. H. petrealis *Grt.*, light, August. Renia restrictalis *Grt.*, light, June. Heterogramma rurigena *Grt.*, light, June. Bomolocha baltimoralis *Gn.*, light, June. B. bigugalis *Walk.*, light, June. B. albalinealis *Walk.*, light, July. Tortricodes bifidalis *Grt.*, light, June.

### GEOMETRIDÆ.

Eudropia effectaria *Walk.*, June. Boarmia crepuscularia *Tr.*, June. Therina eudropiaria *G. & R.*, May. T. semimendaria *Walk.*, May. Lobophora vernata *Pack.*, May. L. anguilineata *Grt.*, May. Chœrodes climataria *S. & A.*, June. Aplodes latiaria *Pack.*, June. Orthofidonia exornata *Walk.*, June. Metanema carnaria *Pack.*, June. M. inatomaria *Gn.*, June. Caberodes confusaria *Hbn.*, June. Corycia semiclarata *Walk.*, May. Azelina hubnerata *Gn.*, June. Acidalia inductata *Gn.*, June. Plagodis alcovlaria *Gn.*, June. Fidonia notataria *Walk.*, June. Petrophora populata *L.*, May.

By a comparison of these lists it will be evident that this region affords a rich field for collecting. Many additional species, and possibly new forms, may yet be discovered, especially when we consider that the insect fauna of the mountainous portion is still practically unknown.

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## NOTES UPON LARRADÆ.

By Wm. Hampton Patton, Hartford, Conn.

### LIRIS.

This genus, founded upon a male type with peculiar tarsi, may be characterized as follows: Mandibles not dentate without, but with a shallow median notch; ♀ mandibles dentate within, ♂ mandibles not dentate within. Marginal cell pointed, not appendiculate, reaching as far as third submarginal cell. Ocelli and metathorax as in *Tachytes*.

**Liris coxalis** n. sp.—Clypeus rounded and somewhat produced at apex; fore coxæ of male separated by two slender processes of prosternum, of female contiguous. Length about one inch; Florida. Black; mandibles, except apical third, tawny; tarsi, at least in the middle, brown. Face with tawny pile; posterior tibiæ of ♀ and anal valve of ♀ with brown hairs, anal valve of ♂ silvery; thorax and first segment with pale hairs; ♀ apex of segments one and two, ♂ apex of segments one, two and three, silvery. Tegulæ and wings pale ferruginous, apical third fusco-violaceous. Resembles *Tachytes elongatus* Cr. in coloration, and is but little longer.

### TACHYSPHEX.

Represented in this country by *Larra analis* Fab.; it is scarcely a distinct genus. It differs from *Larra* only in the hind ocelli being oval, and the metathorax resembling *Lyroda*. Other sections of *Larra* and *Tachytes* have as good a claim to a generic name.

### LARROPSIS n. gen.

LARROPSIS TENUICORNIS (*Larrada tenuicornis* Smith) Type. Second submarginal cell petiolate. Resembles *Ammosphecidium* in many characters, but differs in many others. I have taken this species in Connecticut and upon the calyx nectar-glands of *Tecoma* in Virginia.

LYRODA SUBITA Say.—This species is peculiar for its non-fossorial tarsi, and may belong to *Didineis* (nec *Alyson*). Its method of carrying *Nemobius*, which it catches to feed its young, is interesting. It holds the cricket by clasping the base of the antennæ between its mandibles and clypeus, the minute teeth here preventing the antenna from slipping—this explains the use of the teeth on clypeus.

BOTHYNOSTETHUS = PISONITUS Shkd. = SILAON Picc.

*Tachytes cælebs* Pttn. is ♂ of T. ABDOMINALIS.

*Larra divisa* Pttn. is ♀ of L. ÆTHIOPS Cress.

TACHYTES MANDIBULARIS Pttn.—This species is common in Hartford, forming hillocks, three or four inches in height and the same in breadth of base, upon sidewalks and lawns about September first. It stores up *Xiphidium* for its brood.

Equatorial Africa promises another treasure to civilization. It is a much scented plant, the branches of which carried about the persons will frighten away mosquitoes.—*Philadelphia Record.*

# A CONTRIBUTION TO THE ODONATA OF MAINE.—II.

Specimens taken near Orono, Penobscot County, Me., 1891.

By F. L. HARVEY, Orono, Me.

(Continued from Vol. II, Nos. 3 and 4, 1891.)

## Tribe I.—AGRIONINA.

### Subfamily 1.—CALOPTERYGINA.

1. *Calopteryx maculata* Beauvois.—Though very abundant last year, was very scarce this season. Specimens were taken, June 13th, in swamps in deep woods, but we visited the locality about the same date where they were abundant last season, but took none. Can it be that this species requires more than one season to transform?

2. *C. æquabilis* Say.—This species seems to be scarce; took a single specimen June 13th.

### Subfamily 2.—AGRIONINA.

4. *Argia putrida* Hagen.—Specimens taken June 20th, over roads.

6. *Ischnura verticalis* Say.—Taken June 13th, but no orange forms observed until July 22d, when they were common, but were not observed mating.

8. *Enallagma Hageni* Walsh.—Taken June 13th and 20th, and July 22d.

39. *Enallagma signatum* Hag.—July 23, 1891, Chemo Stream near the lake; quite abundant. As many as fifty seen in patches of *Juncus* and over lily pods. We were botanizing with some friends, and had time to take only five specimens. We went to the locality July 28th, and not a single specimen could be found. There had been a heavy rain between the dates. Hagen gives the habitat of this species as Georgia and Louisiana.* Mr. Calvert writes that it occurs about Philadelphia, Pa. To find it abundant so far North is certainly interesting.

40. *Enallagma pollutum* Hag.—July 23, 1891, Chemo Stream with the above, but not so abundant. Several seen, however, but only three taken. On July 28th a single specimen was seen and taken. This species is recorded only from Florida (Hagen, 1861, p. 84) so far as we know. To find this southern species so far North, and no intermediate localities, is, indeed, remarkable.

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* Baron de Selys (1876) adds Maryland and Illinois.—P. P. C.

## Tribe II.—ÆSCHNINA.

### Subfamily 3.—ÆSCHNINA.

17. *Æschna* (*Basiæschna*) *Janata* Say.—Reported from College collection, but taken this season, July 6th and 12th, Orono and Chemo Stream.

41. *Æschna* (*Fonscolombia*) *vinosa* Say.—July 12th and 28th, two females taken on window-screen in the evening. They seemed to be attracted by the light.

### Subfamily 4.—GOMPHINA.

22. *Gomphus exilis* Selys.—Reported from College collection, but taken this season in abundance at Orono along the border of woods, June 20th.

23. *Gomphus spinosus* Selys.—Reported from College collection, but taken June 15th this season at Orono over a swamp.

42. *Gomphus brevis* Selys.—June 20th; border of woods, ♂ and ♀. One specimen, ♂, differs from the type by being larger; absence of the small tooth at the rear of the eye near the occiput; the pterostigma dark brown instead of pale yellow, and the anterior femora entirely black instead of yellow below on the middle. Mr. Calvert, to whom the specimens were referred, says: "They differ somewhat from the original description, but as this was drawn up from a single ♂ from Schoharie, N. Y., and a single ♀ (with the last 7 abdominal segments wanting) from Port Neuf, Canada, the differences are perhaps only those of individuals." There is a single ♂ of this species in the collection of the late Anson Allen, of Orono, Me., but the exact locality is not given. This species is closely related to the following species which was taken along with it and *G. exilis* the same day at the same locality.

43. *Gomphus abbreviatus* Hagen.—June 20th, back of college woods. Several males and females; associated with the above. Orono, Me.

44. *Cordulegaster maculatus* Selys.—June 11th. Very abundant over Sunk Haze Stream, Greenfield, Me. The specimens were nearly all males, only one female was taken. They were following the stream up and down, and by our wading to the middle in a shallow place, were readily taken.

45. *Cordulegaster* (*Zoræna*) *diastatops* Selys.—A single ♂ of this species is in the collection of the late Mr. Anson Allen, of Orono, Me., and was taken in the vicinity of Orono.

(To be continued.)

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**To Contributors.**—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

TO OUR SUBSCRIBERS:—This number of the NEWS contains thirty-two pages, an illustration, a review of the literature for a month, identifications of insects for subscribers and free exchange notices. Do you appreciate all this? Do you realize that the price for which you get this is ridiculously low? This is all a labor of love for your benefit and to advance entomology. We tell you this because we are ambitious to make the NEWS a model entomological journal, but to do this we need your assistance and encouragement. If you want to see the NEWS grow and thrive you must do your part. Send us the names of all your entomological friends so that we may send them sample copies. Try and induce others to subscribe. We already have a large subscription-list, but we do not wish to stop where we are at present; we wish to produce an illustrated monthly magazine of entomology which will be the best of its kind in the world; but with all our gratuitous labors in such a good cause, we will fail without your assistance. Remember, that the time we devote to this work is stolen, and that it could be far more profitably spent if we considered pecuniary reward. We depend on you to see that it is not love's labor lost.—ED.

DURING the year 1890 an idea originated among the members of the Feldman Collecting Club which we think is destined to influence the future of entomology in this country and bear good fruit. The idea referred to was the excursion planned for the fourth of July, 1890, at Jamesburg, N. J., at which place the members of the entomological societies of Philadelphia, Brooklyn and New York met. Two of these excursions have been held, and accounts of them have been published in the ENTOMOLOGICAL NEWS and "Canadian Entomologist." Every entomologist knows what a stimulus it is to find some one else as interested in the study as himself, and what additional pleasure it is to have a companion on a collecting trip, with whom we can compare notes and show our interesting captures; and there is also a generous rivalry which induces us to put forth our best endeavors. At Jamesburg, students and collectors who had corresponded or known of each other for years, had the pleasure of becoming more intimately acquainted and a hearty hand-shake, and a pleasant chat and a comparing of notes was seen on all sides. Now what we propose, is to carry this idea farther and organize a National Association, to be composed of the different State organizations. The objects of such an association would be the encouragement of entomological studies, to bring about the acquaintance of those interested in entomology in each State, for the purpose of studying geographical distribution of insects, purposes of exchange, social collecting or field meetings, and for mutual encouragement. An annual dinner might be given and papers read and discussed by the members. Much progress has lately been made in entomology in this country, and its importance as a study is being more fully recognized as time goes by. We hope soon to see such an organization formed in every State and Territory in the Union, with its president, treasurer and secretary. The NEWS will be much pleased to hear of any State taking the initiative, and will gladly publish the name of its officers and members. Some time ago a prominent entomologist from a Western State visited us, and, in talking over matters of mutual interest, we found that he did not know of half those interested in entomology in his own State. Now, it should be the duty of the State secretary of the organization to keep a complete list of all entomologists in the State, with their addresses and order or orders in which they are interested, and send a printed copy to each member, and from time to time notify them of additional names. This article is only in the way of a suggestion, and many other interesting outcomes of the plan may appear and details carried out later on.—ED.

ROCKS.—An entomological friend, to whom I once sent a letter bristling with questions, replied, after a long silence, in explanation: "Remember it is about 999 times easier to ask questions than to answer them!" The questions and problems suggested by Messrs. Mason and Tough in ENTOMOLOGICAL NEWS, are easily asked or stated, but there the simplicity ends.

In an old country like Europe, where there is a large population, with many that are interested in Entomology, illustrated works such as those suggested are feasible, and are in existence. In some cases wealthy amateurs publish expensive works, beautifully illustrated, without hope or expectation of return; while in others, the comparative cheapness of reproductive methods allows of publications at a reasonable price, with a less sumptuous illustration. In our country the number of those interested is so small, that publication must be at a loss even if the illustrations be of the least expensive character consistent with accuracy and definition. Photography will do much, but there are many species, especially among the moths, in which it can give us an outline, and in which it fails to give shades or even contrasts of color where the two colors affect the plate similarly. The orthochromatic plates help somewhat, but do not solve the problem entirely.

I think I can safely say that all of my colleagues in the work on the "List" would be willing to contribute to publications such as suggested, could they be ensured against financial loss—recompense they would not expect. I know of at least two monographic works that cannot be issued in the shape in which they were planned, simply because of the cost and the absolute hopelessness of getting back the outlay. No publisher will touch them, except at the authors' expense, and the authors are not wealthy. But, after all, are the "Rocks" so formidable, and would the illustrations really do much to advance the *study* of Entomology? Mr. Meyrick is opposed to all illustration of species because he thinks the figures will be used to identify specimens without recourse to the text for a knowledge of characters. While I do not agree with him fully, I think there is no reasonable cause for complaint where monographic works on a family are at hand, even if not illustrated. Of course it means study, but no one who is really interested will shirk study. That interest which goes only to the collection of specimens and naming them by pictures, without any further object, is scarcely worthy of much attention. We have books enough for those who want to study, and never have there been so many papers of a monographic character issued, as in the few years last past. The fact that our fauna is incompletely known is no objection to monographic work. A very serious trouble, however, which is really the greatest "Rock," is the fact that the publications that do exist, are usually not accessible, except in large cities, and often not then. Yet, even this trouble is gradually disappearing, and the newer publications, on which ENTOMOLOGICAL NEWS keeps its readers posted, largely render reference to older and more rare works unnecessary. Meanwhile, I will suggest that there is scarcely a specialist who will not gladly name for the collector such material as is sent him, or who will not give what aid is in his power to the young student. Finally, I will make a definite proposition: If three hundred and fifty subscribers could be obtained for a monograph of the Noctuidæ to be issued in monthly parts, each part to cost fifty cents, and to be illustrated by at least one quarto plate with necessary descriptive matter, I would agree to prepare such a work. Number of parts not stated.—JOHN B. SMITH.

THE special bulletin of the Massachusetts Agricultural College just issued contains an interesting account of the gypsy moth, *Ocneria dispar*, by Prof. C. H. Fernald. The State of Massachusetts is making a noble fight against this most destructive insect. Two years ago the State appropriated $50,000 for this work; last year $50,000, and it has lately appropriated $75,000 for the work of the coming year. They are doing everything possible to disseminate a knowledge of this insect among the people, having published a special report, with colored figures, of the insect in its various stages. Prof. Fernald, in his interesting account, says that there is a statement in the second volume of the "American Entomologist," published in 1870, "that only a year ago the larva of a certain Owlet moth (*H. dispar*), which is a great pest in Europe, both to fruit and forest trees, was accidentally introduced by a Massachusetts entomologist into New England." He then gives an interesting account of its distribution, food-plants, enemies, how to destroy them, etc. This method of introduction should be a warning to entomologists. We have had sent to us from foreign countries living injurious insects packed in paste-board boxes which were partly crushed in the mails and in the best possible condition for naturalization.

Mr. CHAS. DURY, in vol. xiv, p. 183 of the "Cincinnati Journal of Natural History," gives an interesting account of the inhabitants of a field mouse nest: "I went to an old orchard, and under the first log rolled over I discovered a nest, and secured a mouse as she rushed out. She proved to be the 'short-tailed meadow shrew,' *Blarina brevicauda* (Say). I lifted the nest into the sifting-net and sifted it over a sheet of white paper, and was overwhelmed at the result. The fine débris was a jumping, crawling mass of insect life: beetles, fleas, ticks and larvæ. There were over a hundred large, vicious-looking fleas, most energetic biters. How the mouse could live in such a den is a mystery. There were 107 *Leptinus testaceus*. The other beetles associated with the *Leptinus* were Staphylinidæ, or 'rove' beetles of species new to me."

Mr. THOS. E. BEAN contemplates collecting during the Summer of 1892 on the mountains of the central range in the vicinity of Laggan and Hector (Can. Pacif. Railway), at summit of Kicking Horse Pass, and in the most accessible part of the Bow Valley. He will give particular attention to alpine work, and collect all orders of insects.

IN the March number of the NEWS, on page 70, there appeared a short article put in by the printer to fill out the page, and he neglected to label it "Newspaper Entomology." This describes a most curious hybrid insect (probably hybrid between a tarantula and a scorpion) which stings and bites with one end and stings with its tail at the other. If it were not stated that the insect was a spider we would think the Doctor specialist who treated the sting or bite, had a scorpion in his mind. It is very doubtful whether a scorpion can sting itself in the back as the sting points the wrong way for this manœuver. We see many curious insects described in the daily press, and one we described in the NEWS turned out to be a new genus and species (*Electricia tomfooleryensis*), vol. ii, p. 54.

Mr. PHILIP LAURENT, of Philadelphia, thinks of going to Colorado on a collecting trip, during the coming season

Prof. C. H. **FERNALD** is writing a descriptive work on the Microlepidoptera, to be entitled "Manual of the Microlepidoptera of N. America" This will be a very important contribution to the subject, and should greatly increase the number of persons interested in this department of Lepidoptera. Prof. Fernald will be his own publisher.

TRANSACTIONS of the American Entomological Society, vol. xix (1892). —Pages 25-40 inclusive, have been printed since our last issue, containing the conclusion of Dr. Horn's "Study of Amara, s. g. Celia," and the first pages of his "Random Studies of North American Coleoptera."

PREVENTION OF THE PEACH YELLOWS AND ROSETTE, AS CAUSED BY THE YELLOWS MITE.—The Peach Yellows is caused by the mite *Briobia pratensis*, as noted by me in ENT. NEWS for December, 1891. Its orange-colored eggs cover the bark in Winter. The mite is also destructive to grass and clover, as noted in "Insect Life" for September, 1890. The Peach Rosette is an after effect of the Yellows, hence the cause is the same. Trees rarely live more than a year after the mites attack them. The mites are classed among those that spin silk, and are readily transported from tree to tree by the wind carrying them upon their silken webs. It has been recommended to root up infested trees, and New York State has a law requiring it, but the discovery of the cause of the Yellows will require a modification of the law, as other remedies may be easily applied. Carbolic soap washed upon the trunks and twigs in Winter will readily destroy the mite eggs, and whitewash similarly applied will also be a good preventative. A spraying of kerosene emulsion, or of pyrethrum in solution, upon the affected trees would also destroy the mites. An investigation of the hatching of the eggs in Spring is needed. The orange-colored mites in contrast with the green of the leaves produces the yellow tint giving rise to the name of the disease.—W. H. PATTON.

PASSENGERS on the Ninth Avenue elevated road, New York, have watched for the past three years a sightly pile slowly growing into shape in Manhattan Square. Those who did not know already what the building was, easily learned from their neighbors that it was the new addition to the Museum of Natural History. On the fifth floor will be arranged the ethnological and entomological collections. The recent additions to the latter are many. Among them are the Elliot collection of New York butterflies, presented by the widow of Mason S. Elliot, of Brooklyn. It contains 30,000 specimens. Her husband's collection of 10,000 volumes of natural history was part of the gift. The Angus collection of 14,000 moths and butterflies is another new exhibit. Of Catocalæ alone, Mr. James Angus informed me that there were over 1100 specimens, the labor of forty years' collecting, and that he never took any at sugar.

R. E. KUNZE.

MERISUS IN EUROPE AND IN AMERICA.—It seems probable that the importation of the European parasite of the Hessian Fly will result as unfortunately as did Prof. Riley's introduction, some years ago, of the

European *Apanteles* parasitic on the cabbage butterfly. In the latter case the only result was the discovery that the insect had been well known in America for fifty years past. So with the *Merisus*, there are no specific characters to separate *nigripes* from our well-known *M. destructor* (Say) and all the species referred to this genus in this country are synonyms. In fact the genus contains but one species. The subgenus *Homoporus* was founded upon dessicated or worn specimens, and the other subgenus named by Thomson was similarly founded upon imperfectly developed individuals. I have bred *M. destructor* Say from the chrysalids of *Orgyia leucostigma* at Hartford; an hitherto unknown host for the species, affording the peculiarity of many (often up to 100) flies emerging from one pupa, whereas in the Hessian Fly each pupa affords room for but one parasite.

WM. H. PATTON, Hartford, Conn.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of speci- s to be unlimited for each sending; 2d, The sender to pay all expenses of transporta- and the insects to become the property of the American Entomological Society; Each specimen must have a number attached so that the identification may be an- ced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III, Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for W. W. Newcomb, W. E. Longley, Geo. Miller, D. S. Harris, W. M. Hill, H. Caracciolo, H. C. Denslow, A. A. Wright, H. E. Weed, W. Metcalfe, A. Sheriff, Frank H. Johnson, A. G. Weeks, Jr.

## Entomological Literature.

To those who can master the German language there is no work published in recent years which will give greater assistance to the student of Coleoptera than the "Coleoptera of Middle and Southern Europe," by Dr. L. Ganglbauer. The work is filled with useful tables, and abundantly illustrated by well-executed wood-cuts of details, which will be found extremely useful. It would be difficult to make any adverse criticism, except that based on purely personal opinion, and to this extent his method of separating the tribes of Carabidæ seems not that which will enable the student to make the most certain progress. The first volume, containing the Cicindelidæ, Carabidæ and Dysticidæ, is all that has thus far appeared.

ACTA SOCIETATIS PRO FAUNA ET FLORA FENNICA, vi, Helsingfors 1889-90.—Enumeration of the Brachelytrous Coleoptera of Finland: II. Pselaphidæ and Clavigeridæ,* J. Sahlberg (1889).

SCHRIFTEN DES NATURWISSENSCHAFTLICHEN VEREINS FUR SCHLESWIG-HOLSTEIN, viii, 2, Kiel, 1891.—Contributions to the insect fauna of Schleswig-Holstein, iv, v, W. Wuestnei.

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), Jan. 29, 1892.—On a Stratyomid Dipter (*Beris vallata* Forster) imitating a Tenthrid (*Athalia annulata* Fabr.), A. Giard. The wandering cricket (*Schistocerca peregrina* Ohr.) and its changes of color, J. K. d'Herculais.—Feb. 5, 1892.—On a hemipter-heteropter (*Halticus minutus* Reuter) which ravages the arachid plantations in Cochin China, A. Giard.—Feb. 20, 1892.—Structure of an abdominal ganglion of *Melolontha*, A. Binet.

LE NATURALISTE (Paris), Feb. 1, 1892.—*Papilio machaon* L. and its different varieties, L. Austaut. Descriptions of new Lepidoptera,* P. Dognin.—Feb. 15, 1892.—The woody cecids of *Rubus*, E. Ballé, figs. Deformities observed in Coleoptera, L. Planet, figs.—March 1, 1892.—Descriptions of new Lepidoptera,* P. Dognin.

TERMESZETRAJZI FUZETEK xiv, Budapest, 1891.—Exotic Myriapoda in the zoological collection of the University of Heidelberg,* Dr. E. v. Daday, 1 pl. New Tenthredinidæ and Siricidæ,* A. Mocsary.

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vi, 1-4, New York, 1891.—Coleopterological notices, T. L. Casey.

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xviii, 2, January, 1892.—New Histeridæ (Coleoptera),* J. Schmidt. On the occurrence of halophilous *Saldae* in Lorraine, J. J. Kieffer.—3. February, 1892. Notes on the beetle fauna of Brunswick, Dr. K. M. Heller. Ichneumonid and Tryphonid studies, Dr. Kriechbaumer. The Zoocecidæ of Lorraine iii, J. J. Kieffer.

OUTLINES OF ENTOMOLOGY.—Prepared for the use of farmers and horticulturists, at the request of the secretary of the State Board of Agriculture and the State Horticultural Society of Missouri. By Mary E. Murtfeldt, Kirkwood, Missouri. Jefferson City, Mo. Tribune Printing Co., State printers and binders, 1891. Pp. ii, 132, iii, 48 wood-cuts. This elementary work describes the structure of insects in general, after which each order is separately considered as regards its various groups with their chief characteristics and habits.

A List of some of the catalogues and local lists of North American Coleoptera.—I. (A-G) II. (H-P) III. (R-Z) By John Hamilton and Samuel Henshaw (Psyche, October, December, 1891; January, 1892).

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* Contains new species other than North American.

**Bulletin de la Societe Philomathique de Paris (8), iii, 4, 1891.—Contributions to the embryogeny of the Chalcidians, preliminary note, L. F. Henneguy, figs.**

**Zoologischer Anzeiger (Leipzig), Feb. 1, 1892.—To the knowledge of the biological relations between host and parasitic bee-larvæ, C. Verhoeff. On the American Intermediate Host of *Echinorhynchus gigas*, C. W. Stiles [*Lachnosterna*].—Feb. 15, 1892.—Self-mutilation among grasshoppers, F. Werner. To the knowledge of cone-lice (*Lachnus*), N. Cholodkovsky.**

**Annals and Magazine of Natural History (6), ix, 50, February, 1892.—Descriptions of new genera and species of Pyralidæ contained in the British Museum collection,* W. Warren.**

**Compte Rendu. Societe Entomologique de Belgique, Jan. 8, 1892. [misprinted 1891] New species of Heterocera from the Dutch East Indies,* F. J. M. Heylaerts. The Coccinellidæ of Chota-Nagpore,*† J. Weise. List of the Hemiptera of Belgium: II. Homoptera, E. Coubeaux.**

**Seventeenth Report of the State Entomologist on the Noxious and Beneficial Insects of the State of Illinois. By S. A. Forbes, Springfield, Ill., 1891. Pp. 90, 36, ix., 7 pls. 1 portrait of Wm. LeBaron.**

**Revue Scientifique du Bourbonnais II, 2, Moulins, February, 1892, *Bittacus tipularius*, R. Martin.**

**Transactions of the American Entomological Society, xix, 1. Philadelphia, Feb., 1892.—Studies in Chrysomelidæ, G. H. Horn, M.D.**

British Naturalist (London), February, 1892.—Portrait of H. T. Stainton. Preliminary list of Hymenoptera-Aculeata of Lancaster and Cheshire, W. Gardner. Dragonflies, F. Milton.

Entomology for Beginners. By A. S. Packard, M.D., Ph.D. Third edition. Revised. New York, Henry Holt & Co., 1890. Pp. xvi, 367. 273 figs.

Entomologisk Tidskrift (Stockholm), xii, 1, 2, 1891.—New Brazilian species of scorpions,*† T. Thorell, 1 pl. New Longicorn Coleoptera,*† C. Aurivillius, figs.; and papers in Swedish on Scandinavian insects.

Proceedings U. S. National Museum xiv, 881, Washington, 1892.—The biology of the Hymenopterous insects of the family Chalcididæ, L. O. Howard.

Special Rrport of the State Board of Agriculture, Boston, 1892.—On the work of extermination of the *Ocneria dispar* or gypsy moth by C. H. Fernald, 26 pp. 6 pl.

Atti d. Reale Accademia dei Lincei (Rome), Rendiconti, Jan. 17, 1892.—On Termite societies, B. Grassi.

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* Contains new species other than North American. † Contains new genera.

JOURNAL OF THE INSTITUTE OF JAMAICA (Kingston), i, 2, Feb., 1892.—A Tachinid bred from *Protoparce Jamaicensis* Butl. in Jamaica, C. H. Tyler Townsend. A first contribution to the entomology of Bath, Jamaica, T. D. A. Cockerell. The larva of *Danais Jamaicensis* Bates, C. B. Taylor.

IOWA AGRICULTURAL EXPERIMENT STATION, Bulletin No. 15.—Des Moines, November, 1891. Reports on injurious insects, H. Osborn and H. A. Gossard.

ENTOMOLOGIST'S MONTHLY MAGAZINE (London), March, 1892.—On the origin of ants' nests, W. W. Smith. Notes on the synonymy of several West-African Lycænidæ, H. H. Druce. Another addition to the British fleas, E. Saunders. Synonymical notes on Cynipidæ and Formicidæ, P. Cameron. Migrations and new localities of some Coccids, W. M. Maskell. Annotated list of British Tachiniidæ,* R. H. Meade. Neuroptera of the Channel Islands, W. A. Luff, R. McLachlan. The butterflies of Rawal Pindi and the Murree Hills (Punjab), N. Manders. Notes.

MEMORIAS Y REVISTA DE LA SOCIEDAD CIENTIFICA "Antonio Alzate," v, 3 and 4, Mexico, 1892.—General protective resemblance in the Mexican Lepidoptera of the genus *Ithomia*, Prof. A. L. Herrera.

COMPTE RENDU. ACADEMIE DES SCIENCES (Paris), Feb. 22, 1892.—Structure of the larval nervous system of *Stratiomys strigosa*, F. Henneguy and A. Binet.

VERHANDLUNGEN DER K. K. ZOOL.-BOTAN. GESELLSCHAFT IN WIEN, xli, 3, 1891.—New Termitophilous insects, with a review on Termite guests,*† E. Wasmann, 1 pl.—4, 1891. On the grasshopper swarms in Algeria, Dr. C. B. v. Wattenwyl. Descriptions of new varieties of Bombycidæ from Syria, A. Rogenhofer. Swimming butterflies, Dr. S. Klemensiewicz.

BULLETIN OF THE AGRICULTURAL EXPERIMENT STATION OF THE UNIVERSITY of Tennessee, iv, 3, July, 1891, Knoxville, Tenn.—The true bugs or Heteroptera of Tennessee, H. E. Summers, figs.

CANADIAN ENTOMOLOGIST, March, 1892.—Miscellaneous notes on butterflies, larvæ, etc., W. H. Edwards. *Pamphila manitoba* Scud. and its varieties, H. H. Lyman. New species of Pyralidæ, G. D. Hulst. Notes on N. American Tachinidæ, etc., v, C. H. T. Townsend. Getting butterfly eggs, W. G. Wright. *Amblyopone pallipes* Hald., W. H. Harrington.

THE ENTOMOLOGIST (London), March, 1892.—*Ephestia kuhniella* R. Adkin. Entomological pins, Dr. D. Sharp. *Arctia caja*, J. Arkle. Notes on the synonymy of Noctuid moths, A. G. Butler. Coleoptera from Central China and the Korea,* Rev. H. S. Gorham. Notes, etc.

SITZUNGS-BERICHT D. GESELLSCHAFT NATURFORSCHENDER FREUNDE ZU BERLIN, Jan. 19, 1892.—Insect remains from the peat strata of Klinge, H. Schaeff.

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*** Contains new species other than North American.** **† Contains new genera.**

## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### MYRIAPODA.

*Spirostreptus flavocingulatus* Daday, Termeszetrajzi Fuzetek xiv, p. 137, tab. vii, fig. 4, Calif. *Rachis californicus*, p. 142, tab. vii, fig. 12, Calif. *Scolopendra viridilimbata*, p. 148, N. Am.

### LEPIDOPTERA.

Pyralidæ: *Monocona* n. gen. Warren, Ann. and Mag. N. H. (6), ix, p. 173. *M. rubralis* id., p. 174, Calif. *Mimoschinia* n. gen. p. 174; type *Botys thalialis* Wlk. *Noctuelia flavifimbrialis*, p. 174, Calif. *Aporodes versicolor*, p. 175, Washington. *Pyrausta coccinia*, p. 176, Calif. *Syllythria subricalis*, p. 177, Calif. *Myelois fructetella* Hulst, Can. Ent. xxiv, p. 59, Ariz., Tex. *M. elegantella*, p. 59, Washington. *M. texanella*, p. 60, Tex. *M. leucophaeella*, p. 60, Iowa. *Acrobasis cirroferella*, p. 60, Tex. *Salebria levigatella*, p. 61, Mass., Wis. *S. purpurella* p. 61, N. Mex. *Zophodia bella*, p 61, Mass. *Ocala* n. gen. p. 61. *O. dryadella*, p. 61, Fla. *Diviana nymphaeella*, p. 62, Fla. *Chipeta* n. gen., p. 62. *C. perlepidella*, p. 62, Fla. *Lipographis subosseella*, p. 62, Bahamas, W. I. *Paralipsa decorella*, p. 63, N. Y., Ont. *Loxostege baccatalis*, p. 63, Tex.

*Papilio Hollandii* Edwards, Can. Ent. xxiv, p. 50, Col.

### HEMIPTERA.

*Halticus Uhleri* for *H. minutus* Popenoe (preoc.), Giard, C. R. Soc. Biol. Paris (n. s.), iv, p. 81.

*Aspidiotus articulatus* Cockerell, Journ. Ins. Jam. i, p. 54, Jamaica, Barbadoes.

### COLEOPTERA.

Casey, Ann. N. Y. Acad. Sci. vi, pp. 9–214, describes 3 n. sp. of Cucujidæ; 1 n. sp. Elateridæ; 3 Scarabæidæ; 6 n. gen., 46 n. sp. Cerambycidæ; 2 n. gen., 54 n. sp. Cistellidæ; 1 n. gen., 7 n. sp. Meloidæ; 28 n. sp. Curculionidæ; from all parts of U. S.

*Euryscopa pusilla* Horn, Trans. Am. Ent. Soc. xix, p. 16, Tex. *E. subtilis* p. 17, Calif. *Amara Belfragei*, p. 19, Tex. *Saxinis politula, speculifera* p. 10, Calif. *Coscinoptera seminuda*, p. 13, Ariz.

### DIPTERA.

*Masicera protoparcis* Townsend, Journ. Ins. Jam i, p. 70, Jamaica.

*Blepharipeza exul* Townsend, Can. Ent xxiv, p. 64, N. H. *Gonia sagax*, p 65, Iowa. *Pseudogonia ruficauda*, p. 66, S. Dak. *Plagia aurifrons*, p. 67, Pa. *Trixa gillettei*, p 68, Col. *Milogramma kansensis*, p. 68, Kan. *Metopia Luggeri*, p. 69, Minn. *Thryptocera americana*, p. 69, D. C.

# Doings of Societies.

A REGULAR MEETING OF THE ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES was held February 25th. Meeting called to order at 8.30 P.M., Dr. Horn, director, presiding. Members present: Ridings, Skinner, Martindale. Associates: Calvert, Johnson, Nell and Fox. Mr. Calvert presented the third lot of European Odonata, twelve specimens of *Gomphus*, which makes the representation of this genus pretty full. Dr. Horn presented thirty-six specimens of Coleoptera from Mexico, being lot No. 2. Specimen of *Triptogon occidentalis* presented by H. Skinner. Fifteen species of Tachinidæ; twenty-one specimens by C. H. Tyler Townsend. These are type specimens, and will make a valuable addition to the collection of Diptera. Mr. Calvert exhibited drawings representing the neuration in his new genus of dragonflies, *Ortholestes* and two allied genera of *Agrionina*. He pointed out the generic differences as shown by variation in the neuration. It was also stated that Dr. Karsch had recently described a new genus of AGRIONINA, *Neuragrion* from Ecuador, and the speaker pointed out the characters on which the genus was based. The capture of a specimen of *Pantala flavescens* was reported from Fairmount Park. Dr. Horn spoke of the mechanism of the veins in NEUROPTERA, in reference to their utility in flight, and in regard to the strength of the wing. The subject was further discussed by Messrs. Horn, Calvert and Martindale. The director announced the death of Henry Walter Bates on February 17th. Messrs. C. W. Johnson and Charles Liebeck were proposed for membership. HENRY SKINNER, *Recorder*.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Feb. 4, 1892.—Under the head of short notes, Mr. Ashmead made some interesting remarks on *Eunotus*, a peculiar chalcid genus, new to the United States. It was his opinion that it belonged to the subfamily Aphelininæ. Dr. Stiles noted a report that a man in Germany had been bitten by the common house fly and died within twenty-four hours. Much discussion followed, throwing considerable discredit upon the story. Mr. Banks exhibited a male specimen of *Loxosceles* which had but six developed legs. Dr. Marx exhibited a peculiar Theridid spider which had extremely long mandibles. Dr. Stiles made some instructive remarks on a liver-fluke story that was circulating in certain papers. According to this story the young stages of the liver-fluke were passed in the house-fly, whereas they are passed in snails. Mr. Mally read a paper on "An Insectivorous Primrose." He drew attention to the fact that *Œnothera speciosa* captured a small Dipterous insect upon its gummy style and stigma. But one species was seen trapped. As the insect could not be eaten by the plant the author thought that the insects must, in some way, aid the fertilization of ovules. Discussed by Messrs. Ashmead, Test, Schwarz, Marx, Howard, Stiles and Marlatt. Mr. Howard contributed an important paper on

"Spider Parasites," being a complete revision of our knowledge of these interesting insects, both European and American. Lists and breeding notes were given and specimens exhibited. He also called attention to the habits of *Mantispa* and some Acroceridæ, which, in Europe, are known to be parasitic on spiders. Discussed by Messrs. Ashmead, Marlatt, Test, Schwarz, Fox and Marx. Dr. Stiles made a few remarks on the various Nematode genera parasitic on spiders. Dr. Marx made a few additions to his paper on ticks. Prof. Summers was invited to speak, and made some instructive remarks on collecting and labeling.

NATHAN BANKS,
*Recording Secretary.*

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CYNIPS Q-GLOBULUS Fitch.—The galls of this species I have found upon the European oak, *Q. pedunculata*, planted in Hartford, Conn. From them I have reared a small inquilinous Cynipid and a species of *Callimome.*

WM. H. PATTON.

THYNNUS IN CALIFORNIA.—This genus has not hitherto been found north of the Equator in either hemisphere, nor has any of the family Thynnidæ. A specimen received from Dr. F. E. Blaisdell from Poway, San Diego County, Cal., is the first intimation of its occurrence in North America. It is a small black species with hyaline wings, and may be named *Thynnus californicus.*—W. H. PATTON.

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## OBITUARY

ROBERT BUNKER died at his home in Rochester, N. Y., March 6th, aged seventy-one years. He was a native of Columbia County, New York. When five years of age his parents removed to Rochester and took up their residence on the site where he died. Mr. Bunker was a cooper by occupation, but spent all his spare time making entomological collections and a few years ago presented his collection to the Academy of Science at Rochester, of which institution he was a charter member. He contributed occasional papers to the "Canadian Entomologist," and to ENTOMOLOGICAL NEWS; these showed that he was an acute observer of insect life. He was, personally, a man of strong traits of character; upright and honorable in every relation of life; broad-minded, yet positive in his opinions; genial and courteous in his intercourse with friends and neighbors. His death will be sincerely mourned by his entomological friends, and by the community in which he lived.

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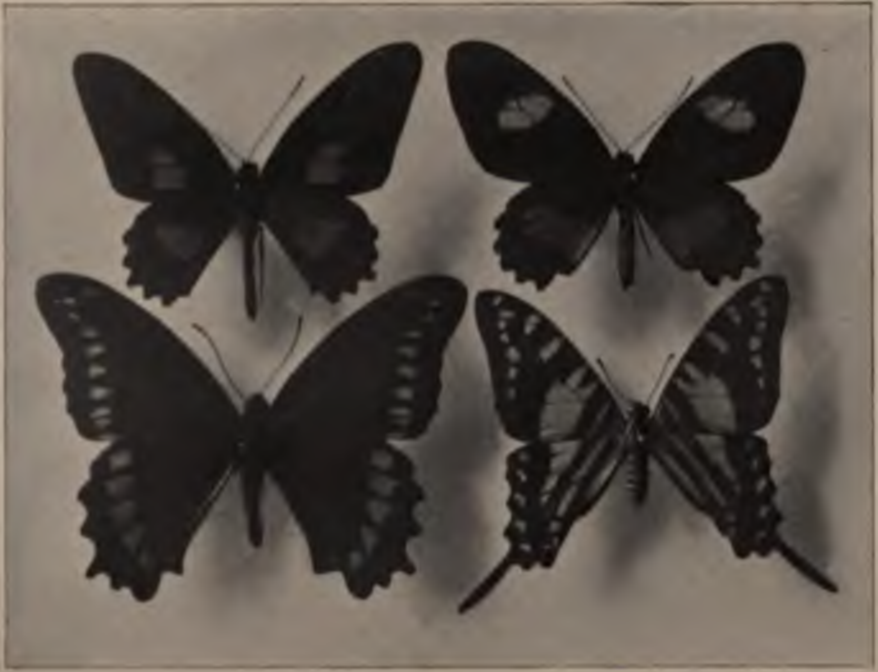
ENTOMOLOGICAL NEWS for March, was mailed March 1, 1892.



Papilio mylotes ♂
Papilio polydamas

Papilio mylotes ♀
Papilio sinon

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. MAY, 1892. No. 5.

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Our illustration this month represents three species of *Papilio* which are visitors to our fauna, and for which collectors should be on the lookout. *Papilio polydamas* has been found on the Indian River, Florida, and *P. sinon* has also been found in southern Florida. *P. mylotes* is said to have been taken in southern California. *Polydamas* and *sinon* are West Indian species, and the home of *mylotes* is in Central America. The ♂ *mylotes* is of a rich black, and the spots on the superior wings are bright green; those on the inferiors are carmine. The spots on the superiors of the ♀ are cream color, and those on the inferiors of a lighter shade of carmine than in the ♂. *P. polydamas* is dark bottle-green, with light green spots on inferiors, and the spots on the superiors are cream color with a tinge of green. The negative was kindly made for the NEWS by Dr. Benjamin Sharp of the Academy.—ED.

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## TWO NEW AND REMARKABLE OPHIONIDS.

By WM. H. ASHMEAD.

In 1868, Dr. Arnold Förster, of Aachen, published a remarkable work entitled, "Synopsis der Familien und Gattungen der Ichneumonen," in which no less than 36 families and 522 genera were recognized.

The work evidently took years of patient labor and research, and it has been too long neglected by European and American writers on these insects, as it contains excellent tables and hints and ideas on the classification of this difficult group, which, if worked out thoroughly, would undoubtedly aid materially in advancing a systematic knowledge of these insects. In separating the Ichneumons into so many families and genera, Förster probably went to the extreme, and this may account for the little value placed on the work by his contemporaries, but from the little study I have as yet given to his work, I am fully convinced that many of his so-called families will hold good, with some modification, as Tribes, in the sense of LeConte and Horn.

His family 20th, or the Mesochoroidæ for instance, will form a natural tribe, Mesochorini, in the subfamily Ophioninæ, distinguished by the large, rhomboidal areolet, and by the two prominent projecting anal styles in the males.

I have been led to these views by a somewhat careful study of some of the families characterized in his work, and by the discovery of two remarkable male insects that for a long time baffled me in placing—one in the National Museum and the other in my own collection—but which I find, with the aid of Förster's tables, belong to two new genera briefly characterized in his work.

In describing these two insects I have deemed it advisable to give below not only a table of the genera of this tribe, but a full generic descriptioh of these two imperfectly known genera, so that other students may easily recognize them.

### Tribe MESOCHORINI.

### *Table of Genera.*

Vertex narrowed, lateral ocelli close to the margin of the eye; claws pectinate . . . . . . G. 1. **Plesiophthalmus** Förster.
Vertex not narrowed, lateral ocelli distant from the margin of the eye.
  Claws pectinate; first abdominal segment with lateral carinæ extending backward from the spiracles; transverse median nervure in hind wing broken . . . . . . G. 2. **Astiphromma** Förster.
  Claws simple; first abdominal segment without lateral carinæ; transverse median nervure in hind wing not broken. G. 3. **Mesochorus** Grav.

. **Plesiophthalmus** Förster.—Head transverse, not wider than the thorax across the wings, antero-posteriorly thin; the frons foveated; clypeus not separated; ocelli large, prominent, the laterals close to the eye margin;

eyes large, narrowed oblong, reaching almost to the base of the mandibles, sinuated within opposite the base of the antennæ; mandibles oblong, bidentate at tip; maxillary palpi long, 5-jointed, the second joint swollen two-thirds the length of the third, the following joints slender, cylindrical, the third and fifth about equal in length, the fourth a little longer; labial palpi 4-jointed; metathorax completely areolated, with linear spiracles; areolet in front wing large, rhomboidal, subpetiolate; the second and third discoidal cells about equal in length, the second abscissa of the cubital nervure strongly curved upwards; transverse median nervure in hind wing broken below the middle; tibial spurs 1, 2, 2, large, those on the middle and hind tibiæ subequal; claws strongly pectinate.

**P. paniscoides** sp. nov. ♂.—Length 13 mm. Pale yellow ferruginous, polished, impunctured; the head above the insertion of the antennæ and the cheeks, the last two abdominal segments and the two long anal styles black; antennæ as long as the body, slender, tapering and involuted at tips, pale at base, but becoming fuscous toward tips; the first flagellar joint is the longest, the following subequal. Thorax very slightly trilobed anteriorly, but the parapsidal furrows not distinctly impressed; scutellum convex, connected with a mesonotal ridge or carina at the sides, but with a transverse fovea at base; metathorax smooth, but distinctly areolated. Legs very long and slender. Wings clear hyaline, iridescent, the stigma and venation pale yellowish; the stigma is lanceolate, with the radius springing from a little before the middle. Abdomen slender, subclavate, subcompressed beneath at tip, twice the length of the thorax; petiole long, slender or subclavate, the spiracles situated at the middle; second segment a little shorter than the petiole; third, two-thirds the length of the second; the following segments subequal.

*Hab.*—Massachusetts. Type in coll. Ashmead.

Described from a single specimen received from Mr. Samuel Henshaw, and labeled as having been collected by "Bowditch."

**Astiphromma** Förster.—Head very broadly transverse, the frons deeply impressed, the clypeus not separated; ocelli large, close together in a triangle, the laterals their width from the eye margin; eyes large, oblong-oval, extending to the base of the mandibles; mandibles stout, bidentate at tips; maxillary palpi very long, 5-jointed, the second joint clavate, the third the longest joint, the following subequal; labial palpi 4-jointed, the second joint the shortest and stoutest, the last the longest; metathorax with a median and a posterior area; areolet of wings large, subsessile, rhomboidal; the second and third discoidal cells equal in length; the second abscissa of the discoidal nervure strongly curved upwards and not broken by a "stump of a vein" at the middle; tibial spurs 1, 2, 2, large and equal; claws pectinate.

**A. pectoralis** sp. nov. ♂.—Length 7 mm. Black, shining, impunctured; scape and pedicel beneath, the face and mandibles, except the teeth, yellow; palpi and tegulæ white, prothorax and meso- and meta-pleuræ pale ferruginous. Legs pale ferruginous, the anterior and middle coxæ and trochanters luteous or white; posterior legs more or less distinctly red, the apex of the tibiæ, spurs, and tips of the tarsal joints, fuscous or black. Abdomen black, the extreme apical edge of the second and third segments white; ventral segments 2 to 4 pale ferruginous, the extreme apical edges of the following segments whitish; spiracles of first segment small, round, placed at the middle; the two anal styles a little longer than the second tarsal joint, black. Wings hyaline iridescent; the stigma large, subtriangular, brown, the other nervures paler brown.

*Hab.*—Texas. Type in National Museum.

Described from a single specimen in the National Museum, donated by Dr. C. V. Riley.

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# Studies in North American Membracidæ.—I.

By F. W. Goding, M.D., Rutland, Ill..

## **STICTOCEPHALA** Stal.

**Stictocephala gillettei** n. sp. ♀.—Convex in front; on each side a lateral carina posteriorly, uniting far back of middle; superior surface of prothorax nearly flat; apex extends almost to tip of tegmina, very slender, strongly curved downward and triquetrous; along posterior half of carina is an impressed line. Head reticulate with yellow, apex hairy; a semicircular line with termini each side of apex; just above eyes on prothorax a scar; ocelli equidistant from each other and the eyes. Prothorax very coarsely punctured, grass-green; tegmina glassy-green, second and third apical cells subequal, fourth nearly as long as the two; all of tegmina more or less punctured, base coriaceous. Chest brownish green, hairy; femora green, covered with coarse hairs; tibiæ light brown, tarsi light brown, tips black. Abdomen green, ovipositor fuscous. Length 7 mm.

*Hab.*—Colorado. Described from one ♀ presented by Prof. C. P. Gillette, in whose honor this beautiful species is named. It may be readily separated from its congeners by the depressed, extended form, lateral carinæ extending nearly to apex; no semicircular lateral impressions, and long, very slender, strongly curved downward apex, and deep grass-green color.

## **TELAMONA** Fitch.

**Telamona rileyi** n. sp.—Similar in size and form to *coquilletti* God'g; the markings are less prominent, lateral horns much less produced.

♂.—Greenish yellow, marked with ferruginous lines, punctured. Head greenish yellow, lightly punctured. Prothorax yellowish green, mottled with ferruginous, and a number of ferruginous, longitudinal, elevated lines; dorsal carina percurrent, a deeply impressed dot on each side of its base; dorsal crest somewhat elevated, much compressed, strongly compressed anteriorly at base and posteriorly behind middle, the highest point of crest at beginning of posterior third, from which point it gradually slopes anteriorly in a gentle curve continuous with anterior third of prothorax, posteriorly sloping for a short distance, then forming an obtuse angle; at the base another obtuse angle is formed, from which the median carina curves gently to the apex; lateral angles a little prominent; tegmina with basal half coriaceous, apical half subcoriaceous, a brown spot at apex. Chest below is dark yellow, coxæ piceous. Legs yellow and hairy Abdomen yellow. Length 6 mm.

*Hab.*—Marlo County, Cal.

Described from one ♂ from Dr. Riley, who has so kindly favored me with much valuable material from the National collection (type in collection of F. W. G.).

This species resembles *coquilletti;* the dorsal crest is reclined, while in that species it is upright.

**Telamona mexicana** Stal. (?) ♂.

In the material sent to me recently from the National Museum by Dr. Riley, for determination, is a ♂ member of this genus, which agrees very closely with the description of *mexicana* ♀ in Bid. Memb. K. p. 249, No. 1. It differs, however, in the absence of the brown spot on tegmina, and the legs are immaculate yellow, tips of tarsi piceous; dorsal crest nearly thrice as long as high at base.

I believe this to be the ♂ of *mexicana;* if it should prove to be undescribed it may be called *pulchra.* Length 7 mm.

*Hab.*—California?

### **PLATYCOTIS** Stal.

**Platycotis minax** n. sp. ♀.—Pale yellow, densely punctured, very much depressed, appearing broad and flat. Head bright yellow, with a longitudinal median carina. Prothorax light yellow, a transverse linear impression just back of base on each side of carina, the impression almost a fascia; anterior horn extending upward and forward, much compressed, anterior edge nearly straight, posterior edge convex and brown; on each side of horn two or three lateral carinæ extending from base to apex; horn about two and a half times as long as broad; at posterior base is an obtuse angle, behind which is a slight convexity, thence straight to apex, which does not reach tip of abdomen; tegmina subcoriaceous, extend far beyond tip of abdomen, light yellow, veins darker; below yellow. Length to apex of tegmina 5 mm.; including anterior horn 6.5 mm.

*Hab.*—California.

Described from one ♀ presented by Dr. Riley.

### **POTNIA** Stal.

**Potnia asodalis** n. sp. ♂.—Dirty yellow, prothorax gibbous anteriorly, gibbosity greenish. Head yellow, sculptured. Prothorax yellowish anteriorly near the base; median carina percurrent, nearly obsolete posteriorly; on each side of carina near the base two large brown punctures; in front, superiorly a large gibbosity occupying about one-half of prothorax, greenish; median carina at this point very prominent and brown; on each side, behind lateral angles a large impression, above which is a second small gibbosity; apex obtuse, not reaching tip of abdomen; punctured; tegmina with basal half coriaceous veins; apex extends beyond tip of abdomen; below yellow; tibiæ spined. Abdomen yellow. Length 5 mm.

*Hab.*—Marlo County, Cal.

Described from one ♂ presented by Dr. Riley (type in collection F. W. G.).

### **STICTOPELTA*** Stal.

**Stictopelta nova** n. sp. ♂.—Very near to *cruenta* Burm. Head bright yellow; ocelli dark brown. Prothorax convex, with base yellow; just above base on each side of obsolete median line a broad, irregular, transverse, shining black line; from base of tegmina posteriorly the lateral borders are white, apex brown, otherwise green and shining; tegmina vitreous, veins of corium black; below yellow; tibiæ with outer surface brown; tarsi brown. Abdomen yellow. Length 6.5 mm.

♀.—Differs from ♂ only in having a broad semi-circular band of a little darker green than ground color, anteriorly, the convexity of which is forward, broken in four spots, the bases of this arched band being above the lateral angles, which are slightly produced.

*Hab.*—San Bernardino County, Cal. Described from two examples.

These were presented to me by Dr. Riley.

### **GARGARA** Am. et Serv.

**Gargara atlas** n. sp. ♂.—Head black, a yellow spot below each eye; eyes yellow. Prothorax ferruginous, base broadly piceous; median carina percurrent, above shoulders a very large irregular gibbosity, posteriorly long and narrow; tegmina opaque, clouded with piceous; a large light yellow (white?) spot at base of tegmina, and one on the external border near apex; below black; femora black, base ferruginous; tibiæ and tarsi ferruginous, tips of latter black. Length 3 mm.

*Hab.*—Kern County, Cal.

Described from two examples from Dr. Riley.

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* *Stictopelta* is one of Dr. Stal's subgenera of *Darnis*. I consider it of sufficient value to be recognized as a distinct genus.

This species is very near to *variegata* Sign. from Calabar, both having a prominent lobe on the prothorax anteriorly, which may place them in a new genus. In *atlas* the tegmina are not vitreous, and have a whitish band near the base; also smaller.

Duplicates of all the new species described in the foregoing paper, excepting *Stictocephala viridis*, may be examined under the above names in the National collection. I am deeply indebted to Dr. Riley for his kindness in allowing me the privilege of studying the duplicate material in the National collection.

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# ENTOMOLOGIZING IN MEXICO.

By W. S. BLATCHLEY, Terre Haute, Ind.

He who would see in the shortest possible time insect life in all its phases, from the few depauperate forms which dwell in the barren regions bordering the realms of perpetual snow to the countless thousands which bask in the genial warmth and amidst the luxurious vegetation of a tropical clime, should visit Mexico.

In less than a week one can pass on foot from the summit of Pico Orizaba, 18,000 and better feet in air, where the mercury marks daily throughout the year many degrees below the freezing point, to the level of the sea at Vera Cruz, where the mean annual temperature is above 80 degrees. In this journey the number and size of the insects met with would be increasing at every onward step, and, if carefully collected, the series would at the end represent forms from every zone on earth.

It was not my good fortune, while a member of the recent Scoville expedition to Mexico, to make this journey, but I collected in various localities from the height of 2500 feet at Cordoba to the lower limit of snow on the mountain. On account of a press of other duties no special work has as yet been done with the insects taken, and, in the present article, I propose to give some of my experience while collecting; to mention some of the most pecular and bizarre forms taken, and to note in a general way the results of the trip.

In the beginning, let me say that, whoever visits Mexico to collect insects should, unless he be a millionaire, take all necessary material with him, for, in the town of 15,000 inhabitants where we made our headquarters for two weeks, chloroform was one dollar per ounce; a cheap pine handle for a net cost twenty-five cents; empty cigar boxes were ten cents each; potassium cyanide could not be purchased, except by a special permit from the mayor, while the native alcohol was too weak to do anything but put on a temporary drunk the specimens immersed in it.

It was the late afternoon of the 20th of July when our party of four, after a long ride of over 3100 miles, passed down the slope of the Mexican railway and entered Orizaba, one of the most charming of the smaller cities of Mexico, situated as it is in a little valley in a semi-tropical region 4000 feet above sea level, and surrounded on every side by lofty mountains. Our hopes were high for the real work of the party, namely, the collecting of the different forms of animal and plant life of the region was to begin on the morrow. Those hopes were somewhat dampened, however, by the information that the rainy season was but well begun, and that the chances were that it would rain every day for a month or longer.

The first insect seen, after we had found a hotel where English was spoken and had washed some of the dust and cinders of the journey from us, was a handsome male of *Dynastes tityus* Linn. which the landlord, who was in high good humor at getting the four of us for the modest sum of fourteen dollars each per week to partake of his hospitality, brought alive to me. He assured me that his brother, who resides at Mexico City and has the largest collection of Coleoptera in the country, had sold scores of them in Europe for five dollars a pair, but when I informed him that the same species is found frequently in Kentucky, and at times in southern Indiana, he seemed somewhat taken back. However, he graciously presented it to me and volunteered to accompany me after the seven o'clock dinner for a stroll about the electric lights, where, he assured me, numerous specimens of *tityus*, as well as of many other large beetles, were to be found.

When we set out to visit the lights the rain was falling in a steady shower; but few insects were flying, and they were mostly the smaller moths. A half dozen or more large brown beetles, a species of *Xyloryctes* which I afterwards found to be very common were, however, taken from the ground beneath the lights, and a few earwigs from the walls of the houses from which the light was reflected.

On the morrow, as soon as our breakfast of bread and coffee, all one ever gets for that meal in Mexico, was despatched, I sallied forth net in hand, and, coming to the outskirts of the city entered an unfenced garden containing about half an acre and began operations. The first insects seen were many of the half-grown young of a gigantic grasshopper, *Rhomalea* sp. ? black in color and in life streaked on the sides with bright crimson. They seemed to be a social sort of creature, as thirty or forty of them would be found feeding together on a single stalk of corn in much the same manner as the larvæ of certain of our moths feed in communities or droves. Unlike the young grasshoppers of this country they were very sluggish in their action, being easily captured with the fingers. After scooping up a number of them, together with many of the young and adults of a large Hemipteran, *Sagotylus confluentus* Say, which were making a meal on the leaves of a gourd-vine, I gave my attention to the butterflies, and passed the morning in that one garden, securing about seventy specimens, representing half that number of species of those attractive insects for which I was primarily in search.

And right here let me say that during that whole morning, yes, during the whole of my collecting in Mexico, I was impressed with a feeling which probably comes to every collector in a strange country—a feeling of being lost among such a multitude of forms of which one is actually in search, but knows but little about. After a naturalist has been in one locality for some time he becomes familiar with the different forms of life about him; knows, for example, most of the plants, birds and insects, if not by name at least by association. He thus becomes able to detect in an instant anything which is new or rare, and a certain thrill of delight comes to him when such a form is seen. But in a country where everything is new, where one may pick up the most common species thinking it to be rare, or, happening upon a small group of something rare, take some of them and let the rest alone believing them to be common, and afterwards, when too late, find out and regret the mistake; in such a locality the collecting, to me, loses a certain degree of its charm.

Numerous as are the insects in a tropical country, it is impossible for one person in a short time to make anything like a thorough collection in all the orders, even in a restricted locality. Lepidoptera and Orthoptera were what I wanted especially, and of them I collected every species I could find. I also took such

Coleoptera and Hemiptera as came readily to hand, while of the Diptera, Hymenoptera and Neuroptera, I took scarcely any, although large numbers of each of those orders were seen.

Of the diurnal Lepidoptera, or butterflies, over 600 specimens, representing 85 species, were taken in the eleven days spent in the vicinity of Orizaba. During that time it rained two whole and seven half days, so that the facilities for collecting them were none of the best. Of these but eight are found in Indiana, namely, *Papilo turnus;* three species of *Pyrameis*, two of which, *atalanta* and *cardui*, are cosmopolitan; the handsome *Callidryas eubule*, which is very rare in this State; *Junonia cœnia*, also a rare species with us; *Terias lisa* and *Ancyloxypha numitor*, the latter being, there as here, the smallest and one of the most abundant of the Hesperidæ.

During one forenoon I took 168 specimens, over forty species from a single field near the outskirts of the city. It was filled with brilliant flowers, and the margin, where occasional clumps of bright red flowers grew, was a favorite lurking place for many of the larger and rarer kinds. One of the most striking species, on account of its size as well as its so-called "protective mimicry," was a large and handsome *Callidryas* light yellow above and of a greenish hue beneath, which, when resting with folded wings, could scarcely be distinguished from a leaf so closely did the color and the prominent veins on the underside resemble those of a leaf.

(To be continued.)

## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

Following the Sphingidæ in our catalogues and lists come the Sesiidæ. They were originally included with the clear winged Sphinges on superficial characters, and, though long since separated from them, are yet, as a rule, placed next to them. In fact, except for the superficial resemblance, there is nothing warranting any close association of the two families. So far as I am aware the larvæ of the Sesiidæ are borers, living in roots, stems and trunks of vines, shrubs and trees, sometimes maturing two broods in one season more usually annual, and rather more rarely passing more than one year in the larva state.

The imagos have moderately long antennæ, gradually and variably thickened medially, more slender apically, the tips often with a brush of hair. Rarely they are setaceous, or thread like. In the male they are often furnished with lateral tufts of bristles and sometimes with lamellæ or pectinations. The head is variably developed, usually quite small; ocelli present; tongue varying from a well developed organ to a mere rudiment. The latter character is of great importance in the systematic study of the family. The thorax is usually robust and quite closely scaled. The abdomen is long and comparatively slender in most cases, often brightly banded. The wings are narrow, the primaries longer than, but not so broad as the secondaries. They are wholly or in part transparent as a rule, and this, combined with the bright, banded maculation, gives them a wasp-like appearance that may be protective.

The venation is distinctive, and of a low type. The median cell is well developed, and all, or nearly all, the veins arise from it separately. The internal vein is wanting, or forms the internal margin itself. In the secondaries we have a very similar type of venation; but here the costal vein is missing, and there may be two or three internal or free veins. Vein 5 is often absent as well.

The legs, as a whole, are well developed, the posterior often markedly longer than the others, while the anterior are actually, as well as relatively, short without being weak.

The sexes sometimes differ quite markedly, not only in size, but in color and maculation, and it is not unlikely that some of our numerous species represent sexes of others. In habit the insects are diurnal as a rule, but have been occasionally attracted to light. The characters of most of the American genera have been given by me in "Entomologica Americana," iv, 9–13.

Somewhat allied to the Sesiidæ, in habit and appearance, are the Thyridæ. The relation between the two is superficial merely, and vanishes on study. They are small and stout, with long, strong tongue, large, projecting, bristly palpi and spindle-formed antennæ, the basal joint much enlarged. In the male they are singly pectinated. The ocelli are wanting. Thorax robust, abdomen conic and comparatively short. The legs are stout, clothed with long, stiff hair, middle tibiæ with one, posterior with two pairs of spurs. The wings are usually quite short and broad, small in comparison to the robust appearance of the insect, and with an irregular outer margin.

The primaries are 12-veined, all the veins (save the costal and submedian) separately out of the median cell. Internal, or submedian vein, forked at base. The secondaries have two internal veins, and the costal free from the base the full length of its course. In color the species are black and white, or a peculiar yellowish brown and whitish.

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## A CONTRIBUTION TO THE ODONATA OF MAINE.—II.

Specimens taken near Orono, Penobscot County, Me., 1891.

By F. L. Harvey, Orono, Me.

(Continued from Vol. III, page 92.)

### Tribe III.—LIBELLULINA.

### Subfamily 5.—Cordulina.

46. *Macromia* (*Didymops*) *transversa* Say.—June 6, 15, 20. Abundant in the woods, Orono, Me.

47. *Cordulia* (*Tetragoneuria*) *semiaquea* Burm.—Quite abundant over Chemo Stream during July; Bradley, Me.

28. *Cordulia* (*Neurocordulia*) *Uhleri* Selys.—Reported last season from specimens in the College collection. This season taken on several dates in June over swampy road in College woods, Orono, Me.

48. *Cordulia* (*Somatochlora*) *lepida* Selys.—July 12th one male; July 28th several males; one pair was seen mating and taken in the net, but the female, unfortunately, escaped. No other females seen: Chemo Lake near the outlet. The wind was blowing hard, and they had collected in an opening in the woods and were easily taken.

49.—*Cordulia* (*Somatochlora*) *forcipata* Scud.—June 13, 15, 16, over swamp in College woods; July 22, over Chemo Stream, Bradley, Me. This is the *Epitheca forcipata* of Hagen's Synopsis of 1875. It seems to be abundant about Orono, Me.

50. *Leucorhinia hudsonica* Selys.—June 1st seven males. Over a road near a small pond, Old Town, Me. On the Veazee Railroad half way between Stillwater and Old Town. My attention

was called to this species by Mr. J. M. Rondlette (Class 92), who saw them flying the last of May, and was with me when the specimens were taken. This species seems to emerge very early. Only one female seen, but not taken. These specimens showed much brighter colors than those assigned to them in the books.

51. *Leucorhinia frigida* Hagen.—A single specimen (♂) of this rare species was taken July 11th over Chemo Stream, Bradley, just above the dam.

52. *Diplax costifera* Uhler.—Many specimens taken July 12th along Chemo Stream, Bradley, Me.

53. *Celithemis elisa* Hag.—A single ♂ July 22d, and July 28th a dozen males. No females taken; Chemo Stream where it leaves the lake. Our specimens were much brighter than the colors assigned to this species in Hagen's description (Neur. N. A. p. 182, 1861).

## REMARKS.

Additional notes upon species repoated in ENT. NEWS, Vol. II, Nos. 3 and 4, 1891, are numbered to agree with those of that article. Species reported for the first time in this article are numbered from 39 to 53.

The species found the past season include some rare forms and others remarkable for their occurrence so far North. There seems to be good reason for believing that the New England insect fauna extends along the coast of Maine and there mingles with boreal forms. The species reported above swell the number of species of Odonata to date known by us from the vicinity of Orono to fifty.

As we have made no special effort to collect these forms the indications are that the State is rich in species.

We are greatly obligated to Mr. P. P. Calvert, Philadelphia, Pa., for examining specimens and for other professional courtesies, and to Mrs. Anson Allen, of Orono, Me., for the privilege of examining the Odonata collected by her husband.

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AN exchange says that Jerry Simpson, the "sockless statesman" of Kansas, it is rumored, will petition Congress for a $2,000,000 appropriation for the purpose of experimenting in crossing honey-bees with lightning-bugs, under the impression that should he succeed the bees will be able to work nights.—*Richland* (*Iowa*) *Clarion.*

# ENTOMOLOGICAL NEWS.

Published monthly (except July and August), by the Entomological Section of the Academy of Natural Sciences, of Philadelphia, with the endorsement of the American Entomological Society. It will contain not less than 240 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., MAY, 1892.

**Entomological rubbish.**—Why is it that in this country our entomologists get so many poor and imperfect specimens? and when they do secure them make matters worse by running pins through them out of all proportion to the size of the insect. In Europe they do these things far better, but it may be said that Europe is an older country, and that they have had many years in which to learn entomological technique; true, but the difference in the perfection of the specimens and in the mounting seem out of all proportion to their respective ages. Some time ago a well-known collector wished to know why so many poor specimens came in exchange from Philadelphia entomologists; our reply was, that none of them were caught in Philadelphia, but had been received from other parties. He already had all our local species and those sent were from other places. It is time we had learned dexterity in catching specimens so that they are not ruined. Neatness in pinning, expanding and mounting, will greatly enhance the value of a specimen, and it will receive more respect and be much more likely to be preserved. If a large, heavy species has a No. 1 pin in it and you attempt to move it from place to place, the chances are the pin will bend and the specimen be ruined. It is a common thing to find No. 4 pins put through our smaller moths and butterflies, and these pins pointing at the cardinal points of the compass. Seek your specimens at the proper time, while they are fresh, and catch and kill them in such a manner that they wont look as though the cat or the baby had been playing with them. Use a pin in proportion to the size of the insect, and remember it goes through either the middle of the thorax or the right elytron, and should be exactly perpendicular. Always have a uniform length of pin above the thorax (⅜ inch.), and it is best to make a little measure to test this if you wish your specimens to look well and be a uniform height on the pins. For Macrolepidoptera use Nos. 2, 3 and 4, Klaeger pins, and for Micros use the silver pins (Klaeger) that come specially for them. These micro pins are fastened to an ordinary No. 3 or 4 pin. Any insect that is too small for a No. 2 Klaeger pin should be mounted on card-board; in other words, *never use a finer pin than a* No. 2 *in any of the orders.* In spreading Lepidoptera be careful to *have the interior margins of the superior wings make a straight line.* Let us inaugurate an era of well-caught and nicely-mounted specimens. It is almost as easy to do the thing right as wrong, and the NEWS hopes to live to see the time when entomological rubbish will be a thing of the shadowy past.—ED.

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# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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**To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.**

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INCIDENTS OF WORK.—In the fall of 1890 I visited a country place in the southern part of the State for the purpose of investigating the habits of the screw worm (*Compsomyia macellaria*). Desiring to watch the work of the species without interruption, I secured a nearly dead sheep in the shade of a tree about fifty yards back from the public road and sat myself down beside the sheep to watch the larvæ in their work. Occasionally flies were caught in the hand and put in the cyanide bottle, or when a full grown larva dropped from the wounds for pupation it was put into earth in a bottle brought for that purpose. Thus a full half day was spent beside the sheep. But my doings had not been unobserved, as passers by had watched with amazement a stranger in their midst catching flies from a nearly dead sheep, and it was soon known in the little hamlet that the bug man who had arrived the night before was catching flies to eat. Imagine my surprise after reaching my hotel to be surrounded by a group of listeners who asked if the flies were really good to eat? how long had I lived off such truck? and if the flies were eaten to cure any disease, etc.? My explanations, however, were satisfactory to most of those present, although when I explained that the parents of the screw-worms were small flies and exhibited specimens, several knew as well as they knew anything that I was mistaken, as a prominent physician of the town had shown that the parent of the screw-worm was a species of wasp. The physician had actually shown this to be the case by squeezing a live screw-worm from the abdomen of the wasp. One of the listeners was so sure that the parent of the screw-worm was a wasp that he was willing to back up his statement with a good financial consideration. But upon my offer to put up a like amount, he was afraid to have the subject decided by trial owing to the difficulty it would be to get the right species of wasp. A merchant recently told me of a conversation he had had with a farmer about a recent bulletin of the Station treating of the black weevil (*Calandra oryzæ*), which was about as follows:

Farmer: "I never tried this remedy, but I know one thing he is off on."

Merchant: "What is that?"

Farmer: "Why, he says them 'ere corn weevils is produced by eggs which are laid by the old weevils. That's not so, and I know it. Them 'ere weevils come from the vital force in the grain and grow after the corn has been put in bins, in the same way as seeds sprout in the Spring."

Merchant: "What makes you think that?"

Farmer: "Why, I know it's the vital force in the grain that grows the weevils, because you never see the weevils in rotten kernels."

It would be hard work to pound sense into a stone, and the merchant, realizing this, proceeded to tell the farmer that we lived on a small organism known as a bacterium, but when we were sick the bacterium lived on us. Surely "where ignorance is bliss 'tis folly to be wise."

HOWARD EVARTS WEED, Agricultural College, Miss.

NEWSPAPER ENTOMOLOGY.—I do not like to see unreliable entomological statements designated in the NEWS as "newspaper entomology." If I were asked to state what I thought to be the greatest incentive to the popularity of entomological study during the present century I would unhesitatingly say the newspapers. By this I mean papers usually known and spoken of as newspapers, and more especially the agricultural press. The entomological question is here discussed mostly from an economic standpoint, yet interest in the science is pretty sure to be awakened, and study and research will not stop at the point of injurious and beneficial species. Purely scientific works and periodicals treating the subject are accessible but to the few, and are not to be found in the homes of the masses, while the homes without newspapers are few and far between. As to the reliability of scientific articles diffused through this medium, why are they not to be depended upon as much as are other matters from the same source? If the paper is reliable, its statements can nearly always be depended upon. Most of our eminent entomologists have at some period of their career addressed the public through the medium of the newspapers, and I venture to say have had larger and more appreciative "audiences" than when the fruits of their researches were disseminated by means of the strictly scientific periodicals or books. To the science of entomology much of my spare time has been given, and, in an humble way, I do not hesitate to declare that, aside from personal research, by far the greatest incentive to additional study has been "newspaper entomology," not of the *Electricia tomfooleryensis* kind, but such as is printed in the entomological columns of the *Prairie Farmer* and other agricultural papers, and which have at one time or other included the writings of many of the highest authorities in our beautiful science.

In conclusion, I would most earnestly beg our editor to refrain from labeling preposterous statements as "newspaper entomology," as thereby doubts are cast upon the veracity of such standard authorities as the *Prairie Farmer* and other reliable newspapers to which due credit is given even in text-books of entomology (see "Packard's Guide to the study of Insects"). We all know that mistakes are apt to occur in newspapers as well as elsewhere, and will not deny that gross exaggeration is often practiced by unprincipled journalists, but these are the exceptions and not the rule. Long live ENTOMOLOGICAL NEWS and "newspaper entomology!"

ALDA M. SHARP, Gladbrook, Iowa.

An article labeled "newspaper entomology" simply shows its source, and is not intended as a reproach.—ED.

Mr. SYDNEY SMITH could not appreciate an entomological paradise when he characterized insects as the curse of the tropics. "The *bete rouge* lays the foundation of a tremendous ulcer. In a moment you are covered with ticks, *chigoes* bury themselves in your flesh and hatch a large colony of young *chigoes* in a few hours. They will not live together, but every *chigoe* sets up a separate ulcer, and has his own private portion of pus. Flies get entry into your mouth, into your eyes, into your nose. You eat flies, drink flies, and breathe flies. Lizards, cockroaches and snakes get into the bed, ants eat up the books, scorpions sting you on the foot. Everything bites, stings, or bruises; every second of your existence you are wounded by some species of animal life that nobody has seen before, except Swammerdam and Merian. An insect with eleven legs is swarming in your tea-cup, a nondescript with nine wings is struggling in the small beer, or caterpillar with several dozen eyes in his belly is hastening over the bread and butter. All nature is alive, and seems to be gathering all her entomological hosts to eat you up as you are standing, out of your coat, waistcoat and breeches. Such are the tropics. All this reconciles us to our dews, fogs, vapors and drizzles, to our apothecaries rushing about with gargles and tinctures, to our old British constitutional coughs, sore throats, and swollen faces."

A SUGGESTION TO LEPIDOPTERISTS.—In connection with the article by Prof. Smith, in the NEWS for March, on the Lepidoptera, it has occurred to me that some ideas which presented themselves while studying that order might be useful or suggestive to others, particularly to those constructing keys or tables for popular use. While using such keys (and it is true of many descriptions also) I have often had my patience severely taxed by the propensity of the writer to put the cart before the horse; in other words, to ignore the proper sequence of words and phrases. Not only that, but some keys contain many needless repetitions of the same phrase or set of phrases, often ingeniously arranged by the author (for variety, I presume, I hope not with malicious intention) in all the combinations possible, adding immensely to the amount of time consumed in their use without any beneficial results. Uniformity is sometimes much to be desired. It is desirable here. There is enough to be done in our science without needlessly wasting any time. As a remedy for the first evil I would propose two or three rules for guidance in writing descriptions, and for the second the use of abbreviations. The rules are brief and easily borne in mind. The abbreviations are few and suggestive. I am well aware that the use of rules and abbreviations when many and complicated is unwise; but if few, simple, suggestive and labor-saving, it has many advantages. A letter or figure appeals to the mind more quickly and surely than a word. Take for instance:

A broad, submarginal band of buff on the lower surface of hind wings.

Proper sequence:

Under surface of hind wings with submarginal band of buff broad.

Now let

A = above = upper surface of wings,
B = below = lower surface of wings,
1 = front wing, and 2 = hind wing,

And we have:

B 2 with submarginal band of buff broad.

The rules I would suggest are:

Proceed from the general to the particular; and (usually) from the more obvious to the less so. Locate a peculiarity before describing it.

These are not to be considered inflexible, and should be applied to phrases which present a single idea to the mind rather than to single words. I would invariably, however, refer to the surface first, the wing second, and the details last, for reasons too obvious to need mention. The abbreviations I would recommend are as follows:

A (above) = upper surface of wings.
B (below) = lower surface of wings.
1 = primary = front wing.
2 = secondary = hind wings.
c = cell.
v = vein.

Thus B 1, c 6, refers at once to cell six on the under surface of the front wings.

These abbreviations are, of course, chiefly of value in reference to the Lepidoptera, especially the butterflies. Perhaps the plan can be adapted to other orders, at least it seems likely to be applicable to some of them. The other suggestions apply to all.—A. P. MORSE, Wellesley, Mass.

AILANTHUS FOLIAGE AND THE ROSE-BEETLE.—In Bulletin No. 32 of the New Jersey Experiment Station, discussing the rose-chafer (*Macrodactylus subspinosus*) Prof. Smith states that some other things "decoctions of peach leaves and the blossoms of Ailanthus were found to be valueless in destroying the beetle." This is the only reference I have been able to find to this tree, in this connection, until recently. While attending a farmer's institute at Martinsville, Ind., my attention was called to the fact that during last Summer the rose-chafer was very troublesome in that vicinity, defoliating whole vineyards, as well as doing much damage to roses and other cultivated plants. There seemed to be no remedy for the pests, but later on they were found to be feeding in countless numbers on the foliage of an *Ailanthus glandulosus* tree which stood in the court-house yard, and it was also discovered that in a very short time the beetles commenced falling to the ground dead; and, as the janitor of the court-house expressed it to me, "the ground under the tree was literally covered with dead insects, and they did not recover again either." I was shown the tree, which was certainly *Ailanthus glandulosus*. May it not be possible that the foliage of this tree, if not the blossoms, possesses poisonous properties which may render it an effectual remedy for this insect?—Prof. J. TROOP, Indiana Experiment Station.

*Cossid* or *Hepialid?*—I have found in northern New York what appears to be a *Cossid* or *Hepialid* larva boring the trunks of black ash growing in swamps. They work in young and vigorous trees; the pupal shells, seen protruding near the ground, indicate a size nearly that of *P. robiniæ*. Does any reader of this note know what species has this habit?—D. S. K.

TRANSACTIONS of the American Entomological Society, vol. xix (1892). —Pages 41–88 inclusive, have been printed since our last issue, containing the conclusion of Dr. Horn's " Random Studies of North American Coleoptera;" also "The North American species of *Ceropales*," by W. J. Fox; "A Revision of N. American species of *Phlepsius* (with a plate)," by E. P. Van Duzee; "The Mouth Parts of *Copris carolina*, with notes on the homologies of the mandibles (with two plates)," by John B. Smith; and the beginning of " Notes on North American Tachinidæ, Paper III," by C. H. Tyler Townsend.

## Entomological Literature.

BIOLOGIA CENTRALI-AMERICANA. Part xcviii, December, 1891.—Coleoptera: vol. iv, pt. 2, pp. 361–368, pl. xvi, G. C. Champion; pt. 3, D. Sharp, pl. vi; vol. vi, pt. 1, pp. 281–312, M. Jacoby. Lepidoptera-Heterocera: vol. ii, pls. xlii, xliii, H. Druce. Diptera: vol. iii, pp. 1–56, S. W. Williston. Part xcix, February, 1892.—Arachnida-Araneidea, O. P. Cambridge, pl. xi. Coleoptera: vol. iv, pt. 2, pp. 369–392, G. C. Champion; vol. vi, pt. 1, supplement, M. Jacoby, pl. xlii. Diptera: vol. iii, pp. 57-72, S. W. Williston, pl. 1.

TRANSACTIONS OF THE YORKSHIRE NATURALISTS' UNION. Part 16. Leeds, November, 1891.—List of the Coleoptera of Yorkshire (cont.), pp. 49-64, Rev. W. C. Hey.

BIBLIOTHECA ZOOLOGICA (Cassel), viii, 3, 1891.—Researches on mimicry as a basis of a natural system of Papilionidæ, Dr. E. Haase.

ZOOLOGISCHER ANZEIGER (Leipzig), Feb. 29, 1892.—On the develop- nt-history of the parasitic Hymenoptera, N. Kulagin; of the Pedipalpi, . A. Strubell. March 14, 1892.—On the development of the Lung- oks in *Scorpio fulvipes*, M. Laurie, figs. Preliminary communication a new German species of *Chordeuma*, C. Verhoeff. Supplementary remarks to my communication on sense organs in the palpi and first pair of legs of Solpugidæ, Dr. P. Bertkau.

ANNALS AND MAGAZINE OF NATURAL HISTORY, ix, 51, March, 1892.—On some spiders from the Andaman Islands, collected by E. W. Oates, Esq.,* Prof. T. Thorell.

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), March 4, 1892.—The "intermediary body" of Flemming in the seminal cellules of *Scolopendra* and *Lithobius*, M. Prenant. March 18, 1892.—The "central corpuscle" of E. von Beneden in the seminal cells of *Scolopendra*, A. Prenant.

REVUE LINNEENNE, viii, 86, Lyons, Feb. 15, 1892.—Description of a new *Saturnia* from China, L. Sonthonnax. Study on the genus *Stenopterus* Steph., M. Pic. Habits and metamorphoses of *Aphodius granarius* L., Capt. Xambeu.

MONOGRAPH OF THE BRITISH CICADÆ OR TETTIGIDÆ, by G. B. Buckton. London, Macmillan & Co. Eighth and last part, December, 1891.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxv, Brussels, 1891.—Hymenoptera collected on the Lower Congo by the expedition under the auspices of the king of Belgium,* A. Schletterer. Catalogue of the Curculionidæ belonging to the genus *Zygops*,* J. D. des Loges.—Compt. Rendu. Feb. 6, 1892. Myrmecological notes,* A. Forel. Heterocera exotica, new species from the Dutch East Indies,* F. J. M. Heylaerts. Note on the African Chrysodemidæ referred to the genus *Iridotænia*,*† C. Kerremans. Diagnoses of two Buprestids from the region of Lake Tanganyika,* id. New Coleoptera from the Congo,* A. Duvivier. Clavicorni from Bengal, A. Grouvelle. Note on the ants of Belgium, A. Lameere. The Brachymera of Belgium and the neighboring regions, E. Coucke. Third note on some Coleoptera Heteromera of Belgium, L. Coucke. Enumeration of the Hemiptera of Belgium (concl.), E. Coubeaux.

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xviii, 4, February, 1892.—An excursion in the vicinity of Nagasaki, Dr. A. Seitz. Further researches on the process of completion of coloration, C. Verhoeff. The Zoocecidæ of Lorraine (cont.), J. Kieffer.—No. 5, March. On some new and rare Fossoria,* C. Verhoeff.

THE BRITISH NATURALIST (London), March, 1892.—The Pterophorina of Britain (cont.), J. W. Tutt. British spiders (cont.), Rev. F. O. P. Cambridge. Notes.—April, 1892. Portrait and sketch of Miss E. A. Ormerod.

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* Contains new species other than North American. † Contains new genera.

The Diptera of Dorsetshire, C. W. Dale. Heterocera of the Island of Man, H. S. Clarke. Lepidoptera of Aberdeenshire and Kincardineshire, W. Reid.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xix, signatures 4-7, Phila., March, 1892.—A study of *Amara* s. g. *Celia* (cont.), G. H. Horn, M.D. Random studies in North American Coleoptera, id. The North American species of *Ceropales*, with a catalogue of the described species of the world, W. J. Fox.

MITTHEILUNGEN AUS DEM NATURHISTORISCHEN MUSEUM IN HAMBURG, ix, 1, 1891.—Spiders from Madagascar and Nossibe,* Dr. H. Lenz, 2 pls. The Termita, Odonata and Neuroptera collected by Dr. F. Stuhlmann in East Africa,* Dr. A. Gerstaecker. The Collembola of South Georgia [Antarctic] from the collections of the German station of 1882–1883,* Dr. C. Schaeffer, 1 pl.

NATURWISSENSCHAFTLICHE WOCHENSCHRIFT (Berlin), March 20, 1892. —On the voracity of *Liparis monacha* L., R. Rittmeyer.

GEOLOGISKA FOERENINGENS I STOCKHOLM FOERHANDLINGAR, Bd. 14, 2, 1892.—On an Hemiptera from the Lower Graptolitic Slates of Sweden,*† J. C. Moberg.

LE NATURALISTE (Paris), March 15, 1892.—Habits and metamorphoses of *Xyloperta pustulata* Capt. Xambeu. Two new Sphingidæ from Eastern. Asia,* L. Austant. Carnivorous caterpillars, F. Plateau, figs.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1892, pp. 133–135.—Report on the Hymenoptera collected in West Greenland, W. J. Fox.

REVUE DES SCIENCES NATURELLES DE L'OUEST. II, 1, Paris, January, 1892.—General considerations on the classification of the Acarina, followed by an attempt at a new classification, Dr. Trouessart. Extends to families and subfamilies.

ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE (2), x, 1, Paris, 1892.—Notes on the life and habits of insects : Observations on *Ammophila affinis* Kirby, Dr. P. Marchal.

ANALES DE LA SOCIEDAD CIENTIFICA ARGENTINA (Buenos Aires), xxxii, 6, 1891; xxxiii, 1, 1892.—New Hemiptera of the Argentine and Uruguayan faunas,*† Dr. C. Berg; *Glyphepomis*, *Parentheca* n. gen. Argentine Dipterology (Syrphidæ), F. L. Arribalzaga.

CANADIAN ENTOMOLOGIST, London, Ont., April, 1892.—Notes on North American Tachinidæ, with descriptions of new genera and species, v, C. H. T. Townsend. Clerck's Icones, W. J. Holland. Hermaphrodite Gypsy Moths, C. H. Fernald. A classification of the North American Spiders, N. Banks. Canadian Hymenoptera, 1, W. H. Harrington. Our Winter beetles, H. F. Wickham. *Chionobas Uhleri*, T. D. A. Cockerell. How to take the oil or grease out of specimens of natural history, P. Fisher.

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*** Contains new species other than North American. † Contains new genera.**

TWENTY-SECOND ANNUAL REPORT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO, Toronto, 1892.—Noteworthy injuries caused by insects during the past season, C. J. S. Bethune. A microscopical examination of an unexpanded wing of *Callosamia promethea*, J. A. Moffat. Notes on Japanese insects, W. H. Harrington. Numerous articles on Economic Entomology by various authors.

NEW MEXICO COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS, Bulletin No. 5, Las Cruces, N. Mex., March, 1892.—Notices of importance concerning fruit insects, C. H. T. Townsend.

ENTOMOLOGISTS' RECORD, London, March 15, 1892.—Effects of temperature on the coloring of Lepidoptera, F. Merrifield. Classification by neuration, J. W. Tutt. The genus *Hepialus*, J. E. Robson. Numerous notes on variations in British insects.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, IRIS, Dresden, iv, 2, Berlin, February, 1892.—A new form of *Morpho*,* Dr. O. Staudinger. The development of the butterfly after leaving the pupal envelope, W. Peterson. New African Lycænidæ,*† Dr. O. Staudinger. New species and varieties of Lepidoptera of the palaearctic faunal region,*† id., 2 pls.

SUPPLEMENTARY APPENDIX to Travels among the Great Andes of the Equator, by Edward Whymper. London, John Murray, 1891.—This volume is made up of a series of papers by a number of specialists, and based on some of the zoological and mineralogical collections made by Mr. Whymper among the Ecuadorian Andes, for the most part at elevations above 8500 feet. The greater part of the book is entomological, the groups treated being Coleoptera*† by (the late) H. W. Bates, D. Sharp, Rev. H. S. Gorham, A. S. Olliff and M. Jacoby; Formicidæ*† by P. Cameron; Lepidoptera* by F. DuC. Godman and O. Salvin; and Rhynchota*† by W. L. Distant. The general entomological results as bearing on questions of Geographical Distribution are discussed in an introduction by Mr. Bates. Numerous excellent wood-cuts, engraved by Mr. Whymper himself, illustrate the text.

PUBLICATIONS DE L'INSTITUTE ROYAL GRAND-DUCAL DE LUXEMBOURG, xxi, Luxembourg, 1891.—Materials for the entomological fauna of the province of Belgian Luxembourg: Coleoptera, third century, A. P. de Borre.

KNOWLEDGE (London), April, 1892.—The life of an Ant, E. A. Butler.

ENTOMOLOGIST'S MONTHLY MAGAZINE (London), April, 1892.—Annotated list of British Tachiniidæ, R. H. Meade. Notes on collecting Tortrices (the Pole system), C. Fenn. On some new species of Histeridæ and one new genus,* G. Lewis. Notes on some British and exotic Coccidæ, J. W. Douglas. On an Indian Ant-mimicking Hemipteron,* E. Bergroth. Note on *Pentaria badia* Rosenh. (= *sericaria* Muls.) with description of a second species from the East Pyrenees,* G. C. Champion.

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ENTOMOLOGIST (London), April, 1892.—Portrait and sketch of Henry lter Bates. Hellebore as an insecticide, W. W. Smith. "Assem-ig" in Lepidoptera, H. D. Sykes. Notes on Lepidoptera taken in 1, Rev. O. Pickard-Cambridge. Notes on British Lepidoptera, *Me-ippe*, R. South. Notes on the synonymy of Noctuid Moths, A. G. ler. Descriptions of some new species of Phytophagous Coleoptera l synonymic notes,* M. Jacoby.

OCIETE LINNEENNE DU NORD DE LA FRANCE (Amiens), No. 232, Oc-er, 1891.—Contributions to the local fauna (Arachnida), M. Du Roselle.

OOLOGICAL RECORD for 1890.—Published by the Zoological Society, ndon, 1892. Insecta by D. Sharp. Arachnida and Myriapoda by R. Pocock.

## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### COLEOPTERA.

Nine n. sp. *Rhipidophorus*, *Nemognatha*, *Zonitis*, Mex., Centr. Am., ampion, Biol. Centr. Amer., Coleop. iv, pp. 361–368. Phytophaga, genera and species, Jacoby, id., vi, suppl., pp. 281–312.

*Zygops* (*Apatorhynchus*) *leopardinus* des Loges, Ann. Soc. Ent. Belg. xv, p. 40, Mex.

*Amara femoralis* Horn, Trans. Am. Ent. Soc. xix, p. 30. *A. robustula*, 32, Calif. *A. nupera*, p. 33, Col., N. Mex. *A. imitatrix*, p. 34, Calif., ish., Vancouver. *Trechus barbaræ*, p. 41, Calif. *Platynus myrmetes*, *arizonensis*, *languidus*, p. 42, Ariz. *Pinodytes Hamiltoni*, p. 45, . *P. pusio*, p. 45, Cal. *Dendrophilus californicus*, p. 46, Cal. *Aulacelis purpurea*, p. 46, Ariz. *Notoxus Schwarzi*, p. 47, Utah.

### DIPTERA.

Syrphidæ: n. gen., sp. and synopses of genera, Williston, Biol. Centr.-ner. Diptera, III, pp. 1–72.

One new genus (*Clistomorpha*) and ten new species of Tachinidæ, U. Townsend, Can. Ent. xxiv, pp. 77–82.

*Hæmatobia alcis*, Snow, 22d Rep. Ent. Soc. Ont., p. 96, Minn.

### HYMENOPTERA.

*Cercopales Stretchii*, Fox, Trans. Am. Ent. Soc. xix, p. 52, Cal.

*Nematus borealis* Marlatt, Proc. Acad. Phila. 1892, p. 133, Disco Is.

*Ichneumon discœnsis* Fox, Proc. Acad. Phila 1892, p. 134, Disco Is.

*Notopygus americana* Harrington, Can. Ent. xxiv, p. 98, *Prionopoda adensis* p. 98, *Ischyrocnemis ottawaensis* p. 98, *Pimpla ellopiæ* p. 99, n.

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* Contains new species other than North American.

# Doings of Societies.

A Regular Stated Meeting of the Entomological Section of the Academy of Natural Sciences was held March 24th at the hall S. W. cor. Nineteenth and Race Streets, Dr. Horn, director, presiding. Meeting called to order at 8.20 P. M. Members present: Laurent, Ridings, Blake and Skinner. Associates: Calvert, Fox and Nell. A letter was read from Prof. C. H. Fernald, in which he stated that he had finished studying the Pyralidæ belonging to the American Entomological Society, and had returned them correctly named. Prof. Fernald says: "It is a valuable collection, and I have put a great deal of work on it so as to have everything accurately named, and have written and put a label on each individual specimen, so that no confusion nor doubt can arise about any specimen. The collection contains about 1200 examples, and I added a large number of species from my own collection which were not represented in the collection, and have followed the order and names in the new catalogue. Where I felt certain an insect was a *type* I have so marked it, but Grote and Robinson did not mark their types, so that there may be types in the collection which I have not marked as such. The fact is, a part of the types went to the New York Museum, and I fear may have been destroyed, but I have no means of knowing what ones. I carefully compared these in your collection with the original description, and, where I felt quite sure, marked them; anyway, I believe all their species are represented by authentically named specimens, whether types or otherwise." Mr. Calvert presented the fourth lot of European Odonata. Mr. Laurent exhibited a large number of specimens of Coleoptera which he had collected by sieving earth. Dr. Horn exhibited the type material used in writing his paper on Eumolpini. This is the first time the group has been treated in its entirety. They are a difficult lot for study, of more recent geological time, being feeders on plants of the present period. Nineteen genera were considered. Mr. Calvert stated that five years had elapsed since his election as an associate of the Section, and it was appropriate that he should make a statement of the growth and present status of the Society's collection (Odonata) and his own. The Entomological Society's collection contains, at present, identified specimens of Odonata representing in all 77 genera and 189 species. This total is made up of 62 genera and 147 species from America, 21 genera and 37 species from Europe, 3 genera and 3 species from New Zealand, 4 genera and 6 species from Japan (13 genera and 4 species being repeated in this subdivision). According to present calculations, there are in America North of Mexico 58 genera and 245 species. Of these 54 genera and 136 species are represented in the Society's collection; of the remaining four genera, two are represented by European species and one in his own collection, leaving but one genus, *Oxyagrion*, represented in N. America by but one species, *O. rufulum*, from northern California, but even this locality is considered to be very doubtful by the best authority. In the Society's collection and his own collection together, there are represented 57 genera and 164 species of the Odonat fauna of America North of Mexico, that is, sixty-seven per cent. of all the species. The Odonata of the European faunal district (*i. e.*, geographical Europe, N. Africa, Asia Minor) includes 36 genera and 103 species. Of these the Society's collection has 21 genera and 37 species. My own collection includes 31 genera and 77 species, that is seventy-five per cent. of the species. Of the other five genera, two are represented by species from other parts of the world leaving three unrepresented. The Society's collection does not include any species from the European fauna not represented in his own collection. Mr. Chas. Liebeck and Mr. C. W. Johnson, were duly elected members of the Section.

Henry Skinner, *Recorder*.

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**Entomological News for April, was mailed March 31, 1892.**

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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OUR illustration this month represents part of the life-history of ***Datana ministra.*** The plate was made from a photograph of a drawing found among the unpublished plates of the late T. R. Peale, of Philadelphia.

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## NEW NORTH AMERICAN TACHINIDÆ.

By C. H. TYLER TOWNSEND, Las Cruces, N. Mex.

(Continued from page 81, Vol. III, No. 4)

**Lœwia globosa** n. sp. ♂.—Eyes cinnamon-brown, thickly short hairy, edges touching in front of ocelli; frontal vitta light brown, vertex blackish; anterior pair of ocellar bristles stronger than frontal bristles, directed strongly forward, decussate; sides of front, face and cheeks silvery-white; the præ-genal area very large, brownish, encroaching on sides of face and extending narrowly to bases of antennæ; sides of face with fringe of bristles; antennæ and arista brownish, second antennal joint orange rufous, third joint one and one-half times as long as second, more or less rufous on sides; proboscis about two-thirds hight of head, slim, brownish, labella developed; palpi curved, thickened apically, brown, bristly; occiput blackish, black-hairy. Thorax and scutellum black, with a faint purplish shade, scutellum with an apical decussate and a lateral pair of macrochætæ. Abdomen shining greenish black, in some lights dark metallic-green; second segment with a median marginal pair and a weak lateral pair of macrochætæ; third with a stronger lateral pair and a median r; anal with a submarginal row of six. Legs black, claws ather elongate, pulvilli whitish. Wings grayish hyaline, basal tion and wing veins yellowish; tegulæ soft brownish yellow, halteres ny. Length of body 4.5 mm.; of wing 4 mm.

Described from one specimen; So. Florida (Robertson). This nus differs from *Ennyomma* Twns. in the closed apical cell, nich terminates just before tip of wing.

### **ATROPHOPALPUS** n. gen.

Considerably resembling *Ceratomyiella*, but differs in the char- er of the palpi. Belongs in Phytoinæ. Head more or less gular in profile. Front rather prominent, narrow in ♂, out one-fifth width of head, widened before, face widening at me angle; frontal bristles in a single row, descending on sides f face to lower border of eyes; vertical and next two pairs di- cted backward, rest forward and inward, the descending ones wnward; no orbital bristles (♂). Face receding, epistoma mewhat prominent; facial depression two-thirds width of face, leep; facial ridges bare, except a bristle or two next vibrissæ, r inserted at constriction of ridges about on oral margin, her stout, decussate; sides of face narrow, bare except for the nge of descending frontal bristles; cheeks nearly one-third eye-hight, hairy. Eyes very thinly hairy, almost bare. Antennæ as long as face, second joint not elongate, third about five times as long as second, narrow; arista thickened on basal third, microscopically pubescent, apparently only 2-jointed, basal joint short. Proboscis somewhat elongate, about as long as hight of head, not very stout, labella present; palpi very small, short filiform, terminating in a long bristle. Thorax about as wide as head; scutellum with an apical decussate, and two lateral pairs of macrochætæ. Abdomen narrower than thorax, elongate cylindro-conical, first segment not shortened; macrochætæ only marginal; hypopygium more or less exserted. Legs rather long and slender, not very bristly; claws and pulvilli of ♂ rather elongate, front ones apparently longest. Wings a little longer than abdomen, with costal spine, third vein bristly half way to small cross-vein; apical cell closed in border at tip of wing, fourth vein bent at wide angle, without stump or wrinkle, apical cross-vein very slightly concave; hind cross-vein nearly straight, rather oblique, nearer to bend of fourth vein. Type, *A. angusticornis* n. sp.

**Atrophopalpus angusticornis** n. sp. ♂.—Eyes light brownish; frontal vitta dark brown, narrow; sides of front, face and cheeks silvery-white, except brownish præ-genal area; antennæ grayish black, second joint more or less rufous apically, arista blackish; proboscis dark brown, palpi apparently grayish; occiput cinereous, silvery on edges, gray-hairy. Thorax silvery, with four black vittæ, scutellum silvery, clouded with blackish. Abdomen shining black, segments two to four narrowly silvery white at base, all segments very faintly silvery, anal segment light rufous; first segment with a lateral macrochæta surrounded with bristles, second with a lateral one and a median marginal pair, third with a marginal row of about six, anal with marginal row of eight. Legs black, front and middle femora faintly silvery below, pulvilli fuscous. Wings grayish hyaline, tegulæ translucent white; halteres pale brownish at base, knobs luteous. Length of body 4⅔ mm.; of wing 3⅔ mm.

Described from one specimen; So. Florida (Robertson).

**Myothyria vanderwulpi** n. sp. ♂ (?).—Eyes light brownish; frontal vitta blackish, narrow, one-third width of front; front hardly one-third width of head, equilateral, face widened; two orbital bristles; sides of front, face and cheeks dark cinereous, slightly silvery; antennæ and arista black, third antennal joint about two and one-half times as long as second; proboscis brownish, fleshy, not as long as hight of head; palpi brownish, testaceous at tip; occiput blackish, thinly black-hairy. Thorax black, cinereous pollinose, scutellum black. Abdomen black, bases of second to fourth segments silvery-white; first two segments with a lateral pair of macrochætæ, the second with a median marginal pair; third with a marginal row; anal with several lateral submarginal, and a median discal pair. Legs black, claws and pulvilli very short. Wings grayish hyaline, with costal spine, tegulæ nearly white, halteres blackish, tawny at base. Length of body 3⅔ mm.; of wing 3½ mm.

Described from one specimen; So. Florida (Robertson).

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# ENTOMOLOGIZING IN MEXICO.

By W. S. Blatchley, Terre Haute, Ind.

(Continued from page 114, Vol. III, No. 4)

Other interesting and typical tropical forms were the *Heliconias* with their brilliant colors and long and narrow wings. As many as a dozen of them were often seen fluttering about a clump of flowers, and four or five would at times be captured with a single scoop of the net. The *Neonymphas* were also well represented, two or three species being found everywhere flying close to the ground with that queer jerky flight so characteristic of the members of that genus. Among the Nymphalidæ, however, the species of *Argynnis*, *Melitæa* and *Limenitis*, were the most common, and some of them exceedingly brilliant in color. The genus *Eudamus* was especially well represented among the Hesperidæ, *E. proteus* Linn. being most noticeable on account of its numbers, the long tails of its hind wings, and the surprising swiftness of its flight.

At Fortin, a station nine miles below Orizaba, the difference in level being 700 feet, a number of species were taken which were not found at the higher altitude. Among them was a long-beaked *Libythea*, a genus which is represented in all the eastern United States by but a single species, and a large and beautiful *Caligo*, which, at that height, was very rare, but two specimens having been seen. At a still lower level, however, it is said to be one of the commonest of species.

To the average Mexican a collector of "chinches" or "bugs," was a somewhat novel sight, and many were the curious eyes which followed my every movement. At night, especially when I set out to seek what I might find about the electric lights, I was sure to be followed by a motly crowd of all ages, sizes, sexes and conditions. They would watch me capture a specimen or two with the net and then each one would rush after the largest and finest moth to be seen and endeavor to catch it with his hands. The moths were usually taken from the sides or walls of houses near the lights. The houses were mostly of stone, plastered and whitewashed on the outside, and jut right onto the street with no yard intervening. The light, reflecting from the walls, would attract the insects and often fifty or more of them were to be seen on the sides of a single building. I usually captured the smaller moths by inverting over them a wide mouthed cyanide bottle into which they would flutter quickly, and in less than half a minute would be dead. The larger ones were captured with the net and chloroformed. Of course every specimen caught with the hands was ruined, and when the natives went after them or brought me fluttering specimens with half the scales knocked off their wings, I would shake my head and inform them as best I could that when thus captured the insects were sure to be "rote," *i.e.* broken, and therefore worthless. Then the older persons would cease trying to catch them, but it was hard work to keep the boys back when a large or showy specimen settled near them.

Oftentimes they would attract my attention to a large moth which I had not noticed by clapping me on the shoulder and pointing to it, at the same time uttering in a whisper, as if afraid the insect would hear, the words "*Esta une grande, esta une grande, esta, esta, esta, esta,*" which were: "There is a large one; there is a large one, there, there, there." If a small one they would say "*esta chica, esta chica,*" and if a very small one, "*esta chicita, esta, esta, esta.*"

The houses have the windows very low and protected by gratings which extend out six or eight inches from the wall. The boys often aided me by climbing upon these gratings and reaching with the net a large specimen which had settled close up under the projecting eaves.

On one occasion, about twelve o'clock at night, a drunken fellow with two or three companions came along, and grabbing the handle of the net, he insisted on climbing the window grating of the most palatial residence of the town for a large brown moth which was high upon the wall. I remonstrated with him as best I could, but no policeman being near he insisted on his point, and I finally had to yield. Up he clambered, making noise enough to be heard half a square away, and I fully expected to see him shot by one of the occupants of the dwellings. However, he finally got within reaching distance of the moth, and after several ineffectual attempts, during which he came near falling, succeeded in getting it into the net, and brought it down in triumph to me. I thanked him graciously, and, getting hold of the net, quickly left the scene, although half a dozen desirable specimens were in view.

About 1200 moths, representing 160 species, were taken during my stay at Orizaba, but as yet little has been done towards mounting or classifying them, and hence nothing is known as to the number of rare forms taken. Among the larger ones were numerous species of Sphingidæ, some of which were exceedingly abundant. Of these the largest species taken was *Sphinx leucophreata?*, which expands seven inches. A number of its larvæ were taken from the trunk of a shrub which is extensively used for hedges. When discovered they were stretched out side by side on the trunk of the shrub, and were as close together as they could lie.

Four hundred Coleoptera, representing one hundred and twenty-five species, were taken in the vicinity of Orizaba. As mentioned above, no attempt was made to take a full series of them, but only those as happened in the way were picked up. Of those taken by far the larger numbers were Chrysomelidæ, a family which is extensively represented there, almost every kind of plant having some species which feeds upon it. A *Doryphora*, very similar to *decimlineata* Say, but smaller and darker, was found feeding upon a cultivated species of *Solammi*, showing that that genus of plants is the favorite food of these beetles. Of the Carabidæ, the family most largely represented in Indiana, but half a dozen species were collected, although a person looking for them especially, could undoubtedly have found many more. The largest and most striking beetles taken were the *Dynastes* and *Xylorycles* already mentioned, of which the latter were very common about the lights at night, though more were seen during the day; and the gigantic long-armed beetle *Acrocinus longimanus*, three specimens of which were also taken about the lights. A single male of the handsome and peculiar Scarabæid *Inca clathratus*, was also secured.

Of the Orthoptera, forty species of Acrididæ or locusts, were taken, the giant of this number being *Rhomalia auricornis* Walk., which was not found above Fortin, but was quite frequent at Cordoba. Unlike most of our species it is not found on the ground, but on tall weeds and bushes, upon whose leaves both adults and larvæ feed. Like all the larger locusts it is very clumsy in its movements being easily captured with the fingers. Locustidæ, or "Katydids," were common, especially about the lights, and some of them were of enormous size. The Blattidæ, or cockroaches, are represented in the collection by six or seven species, the most abundant ones seen being the well-known Croton bug and the Oriental cockroach (*Periplaneta orientalis* L.), both of which are cosmopolitan. The "earwigs," formerly classed under this order, but now placed by themselves under the order Dermaptera, are with us very rare insects, but in Orizaba they literally swarmed on the sides of the houses, and three or four species of them were secured.

Sixty species of Hemiptera, or "bugs" proper, were taken as opportunity offered. Leaf and tree hoppers were to be seen by thousands, and varied much in size and color. *Pachycornis torridus* Scop. and *Stiretrux anchorago* Fab., which are among the most brilliant of the Heteroptera, and so variable in color, that each has been described under at least half a dozen names were taken in small numbers, while that pest of the market gardener, *Murgantia histrionica* Hahn. was present everywhere. *Belostoma americanum* Leidy, the "electric light bug," is becoming as well known in Orizaba since the advent of the lights as its congener, *Benacus griseus* Say, which bears the same common name, is known to the inhabitants of our northern cities. Nor can we forbear mentioning, while speaking of Hemiptera, those species of *Acanthia* which were felt on various occasions, but were difficult to capture.

If a Mexican discovers that an American or "Gringo," desires to secure any special article or group of articles the price of those articles suddenly advances one thousand per cent. "Bugs," which were quoted away below par before our advent into the city of Orizaba took an upward impetus in value each day of our stay, and every street urchin and many men began to deal in them, or rather to try and deal in them. One day the landlord informed me that a native was in the office who had "an exceedingly rare butterfly" which he wished to dispose of. I went down and found that he had a small gray moth with a silvery band across its wings. I looked at it and asked him "*quanto?*" (how much?) "*Un peso,*" (one dollar) was the answer. I did not care to purchase, but offered him a "*medio,*" six cents. He walked out with a look of disgust, carrying the precious insect with him, and that night I captured five of them from the side of our building. Another native had a large click beetle with enormous mandibles, which he asked me two dollars for. I finally offered him fifty cents, but he evidently thought I would give more before I left the city and refused the offer, although he did not appear as if he had seen fifty cents in as many months.

After eleven days spent in collecting in the vicinity of Orizaba we left that fair city with many regrets and made our way to the town of San Andres, 4000 feet higher up the slope. The difference in the numbers and variety of insects which this ascent of 4000 feet made was remarkable. During two day's collecting about San Andres not more than half a dozen species of butterflies and as many of beetles were taken, while the other orders were as sparingly represented. As the ascent continued this number became gradually less. At a camp at 12,000 feet a half day's search was rewarded with four species of beetles which were captured from beneath the bark of logs; one small brown butterfly, a *Chionobus ?*, whose range was between 9500 and 13,000 feet, and one species of locust, a *Pezotettix*, which was there quite abundant, and a single specimen of which was afterward taken near the 14,000 feet level.

At the latter point, which was near the lower limit of snow and as high as I ascended two species of rough-backed beetles belonging to the genus *Phellopsis ?* ; one species of Phalangidæ, or harvestmen; the *Pezotettix* mentioned above, and three species of small-sized myriopods were found during several hour's search, the beetles and myriopods being quite common beneath the bark of logs and beneath rocks. A few half-grown specimens of a *Centhophilus*, a genus of wingless Locustidæ, were also secured. These were evidently the bulk of the species of insects found at that altitude at that season of the year, though Dr. Scoville saw at the top of the mountain, 18,000 feet, two specimens of a small white butterfly, but was unable to capture either of them.

## On the Species of ONCOCNEMIS in Colorado.

By David Bruce.

As the Noctuid genus *Oncocnemis* Lederer is not very abundantly represented in the majority of our collections, perhaps a few observations on the species I have taken in Colorado may be acceptable.

1. *O. Hayesii* Grt.—Not very rare at light and over flowers at night in central Colorado, August and September. I took two examples in July this year in western Colorado flying round flowers by day.

2. *O. Dayi* Grt.—Abundant, flying over flowers by day in South Park at 10,000 feet elevation; it has all the habits of *Plusia Snowi* and *P. Hochenwarthi*, and can scarcely be distinguished from these species until captured. I have seen it no place but at the locality named, August and September.

3. *O. fasciatus* Smith.—One beautiful example flying over flowers by day August 20th, southwest Colorado.

4. *O. tenuifascia* Smith.—Common just at timber line in South Park, flying with *Dayi* over flowers in bright sunshine; looks extremely like a *Botis* when flying, August and September.

5. *O. terminalis* Smith.—Not uncommon at Boulder and vicinity; sitting on rocks by day, and have taken several at light at Denver, August.

6. *O. levis* Grt.—Common in August at Golden City and Denver; can be found in plenty by day by examining crevices and under projections near electric lights.

7. *O. tricolor* Smith.—This beautiful species is sometimes abundant at Denver; I have picked off more than a dozen examples from a building near an electric light in one morning, August and September.

8. *O. homogena* Grt.—I met with this species in some numbers near Aspen, flying over flowers in the sunshine; have also taken a few examples at light in Denver, August.

9. *O. Glennyi* Grt.—Occurs in the greatest profusion during September and October at light in Denver City. Walls and fences near electric lights are spotted with thousands in the early morning, the moths flying off or hiding in crevices as the sunshine gets on them. This species is a positive nuisance every fall; the store windows and hallways of hotels are covered with them.

10. *O. occata* Grt.—Occasionally at sugar in Platte Cañon. I met with a few fine examples this Summer near Cañon City, flying by day over flowers, August.

11. *O. Chandleri* Grt.—Occasionally at light in the western part of the State; this year I found it common in July by beating old cedars; they were hiding under the ragged bark.

12. *O. major* Grt.—Several on buildings and in crevices of sidewalks near electric lights at Salida, July. I have also taken it flying by day.

13. *O. cibalis.*—Not common; have taken one or two every Summer near the foothills in the eastern part of the State; they start up from the herbage like *Crambodes talidiformis.*

14. *O. colorado* Smith.—Not uncommon at light in central and western Colorado in July and August.

15. *O. atricollaris* Harr.—Occasionally at light in various parts of the State, August.

16. *O. umbrifascia* Smith.—Two examples only, last July, at light in southwestern Colorado.

I have also two or three species taken this Summer, the names of which I have not yet learned; they are probably undescribed.

## Notes on the LARRADÆ, by William H. Patton.

By WILLIAM J. FOX.

In the April number of ENTOMOLOGICAL NEWS, under the title "Notes on the Larradæ," Mr. Patton has made several assertions which, if not corrected, would ultimately cause much confusion, as they are entirely in error. In correcting these statements I wish to state that I do it in the best of good-will and friendliness to Mr. Patton, to whom I had written some time ago, pointing out the errors.

*Liris* Fab.—I am not acquainted with this genus, but according to Kohl, who must certainly be acquainted with it, the outer edge of the mandibles are without a notch; both sexes have the mandibles bidentate within, not only those of the ♀. In the original description, or in any other of this genus, no mention whatever is made of the tarsi, yet Mr. Patton states that it is "founded on a male type with peculiar tarsi."

*Liris coxalis* Patt. is synonymous with *Tachytes aurulenta* Fab.

*Tachysphex* Kohl.—This genus is characterized and distinguished from *Tachytes*, to which it is allied, by the more slender form and more feeble hairing; the anterior femora of the ♂ are notched near the base beneath; the fore tarsi ♀ having very long, flexible spines, and the pygidium being naked. It is certainly not represented in this country by *Larra analis* Fab. as an examination of that species will show.

*Lyroda subita* Say certainly does not belong to *Didineis*, which belongs to the Nyssonidæ. The hind femora are toothed near the apex in *Didineis*, which is not the case in *Lyroda subita.*

I am not acquainted with *Pisonitus* and *Sylaon*, so again refer to Kohl. *Pisonitus* Shuck. is a synonym of *Pison* Spin. *Sylaon* Picc. and *Bothynostethus* Kohl. differ from *Pison* in having the marginal cell appendiculate, and a pygidial area on the last dorsal segment ♀. *Bothynostethus* differs from *Sylaon* by having a notch on outer margin of mandibles.

"*Larra divisa* Pttn. is ♀ of *L. æthiops* Cress." How can this be? The type of *æthiops* is a ♀, and is distinct from *divisa* in having the pygidial area differently shaped.

# COLLECTING IN THE FAR NORTH.

## I.—THE ALASKAN COAST.

By H. F. WICKHAM, Iowa City, Iowa.

By request of the Editor of ENT. NEWS I place before the reader some account of a Summer trip to Alaska and that part of British Columbia lying back of it drained by the Stikine (or Stikeen) River. Although some parts of the territory are quite easy of access, the distance from all centres of trade and ordinary routes of travel have combined with the general ideas as to climate and the unattractiveness of the insect fauna, to keep entomologists from visiting them—consequently comparatively little has been done to increase our knowledge in this direction since the time of the Russian explorations. The following notes are intended simply to convey an idea as to the general character of the places visited from an entomological standpoint, but by the kindness of Dr. Horn, in giving his aid in identifying beetles, the correctness of what is placed on record relating to the Coleoptera is secured. A complete list of these insects is in preparation, and will be presented at as early a date as practicable, so that any indefiniteness of specification in this paper will be remedied.

Leaving Tacoma about the middle of June, a run of four days brought me to the first stopping-place in Alaska—the Yes Bay cannery—and as the steamer was to remain a few hours unloading freight, I went ashore to get some insects if possible. The rugged surface of the land with its heavy growth of conifers and thickets of blueberry intermixed with a vile plant known as the "devil's club" (*Fatsia horrida*) is not conducive to either ease or comfort while collecting, and the excessive dampness forms still another drawback. The ground is covered everywhere with a luxuriant carpet of moss, often many inches deep, into which the feet sink at every step. But little was found here, only a half dozen *Pterostichus castaneus*, a few Staphylinidæ, twenty or thirty little moths, a fly or two and a couple of Hymenoptera. The moths were flying around the flowers of the devil's club," and before I had taken all the whistle of the steamer called me back. Shortly after we touched at the Loring cannery, where I took nothing but one or two Scolytidæ flying around newly-cut timber.

Early the next morning we were running along the shore of Wrangel Island, which lies close to the mainland of Alaska, the upper end being directly opposite the mouth of the Stikine River. On the seaward side, only a very few miles from the river mouth, the town of Fort Wrangel lies on a narrow strip of beach, backed by high hills covered with the usual conifers and blueberry undergrowth; close to the beach this growth is replaced by thickets of salmon-berry and thimble-berry, the fruit of both being used as food by the native and white residents, but supporting little in the way of insect life. The great nettles, taller than a man, which are plentiful in these thickets, make the task of forcing a way through them or searching the ground anything but pleasant. However, I expected to make this place my base of operations for some weeks, and so made preparations accordingly.

Investigation showed the insect fauna of the island to be by no means varied, and to present nothing remarkable as compared with other points in the North Pacific. A number of Carabidæ may be taken, mostly along the edge of the beach, just above high-tide mark; among them may be mentioned *Cychrus angusticollis*, *C. marginatus*, *Loricera* 10-*punctata*, *Nebria* sp., *Pterostichus crenicollis*, *P. vitreus*, *P. riparius*, *Bembidium funereum*, *B. flavopictum*, *B. cautum*, *Patrobus septentrionis*, *P. aterrimus*, *Platynus erasus* and *Amara littoralis*. Of the Dytiscidæ only an *Agabus* and a few specimens of *Hydroporus oblitus* were found, and these not in water, but under stones or pieces of wood in very wet places—the use of a net in pools and streams yielding nothing. Search under seaweed and other débris cast up by the sea proved much less productive than I had anticipated, very little except a few Staphylinidæ being taken here. *Trichopteryx parallela* and a species of *Ptenidium* were found sparingly under logs and chips, while *Cryptohypnus musculus* occurred in some numbers under the shingle.

Just within and along the outskirts of the brush, *Athous ferruginosus* is seen quite commonly, flying where footsteps disturb the quiet of the spot. On rolling over sticks or small logs here, which were deeply imbedded in moss and much overgrown with grass, these insects would fly around in numbers, alighting on my clothes and very easily captured—they often came from resting places near or upon the ground, running up the stems of plants until a good place was reached from which to take wing, when they would let go and fly slowly around the spot, something after the manner in which *Myodites* may be seen about golden-rods in the States during Autumn. Occasionally *Podabrus piniphilus* may be found in the same localities as the *Athous*, but not in such large numbers. Far back in the woods but little can be found, except *Pterostichus castaneus*, and this only in small numbers, the growth of moss being so rank as to greatly obstruct search, and by it any logs that may chance to lie on the ground are soon bound down so lightly as to defy efforts to move them. *Aphodius aleutus* occurred once or twice in the first, also an *Eros* of a species not yet determined.

Experience proved it more profitable to set traps for certain kinds of beetles rather than to go after them in their almost inaccessible haunts. With an eye, therefore, to the capture of such species as live in carrion, I piled up a great heap of carcasses of birds in a little thicket a few feet from my cabin-door, every day looking them over carefully and sifting the soil on which they lay, that nothing might escape. The results were far above what I had hoped, numerous species of Staphylinidæ being thus obtained in large numbers, also many *Cercyon fulvipennis*, some *C. adumbratum*, *Choleva egena*, *Ptilium columbianum*, and occasionally other Trichopterygidæ. Taking into account the seeming dearth of Coleopterous life on the island, the number of specimens taken in this way was really surprising.

Little in the way of wood- or leaf-eating beetles was seen on the island, though careful search was made for them. A couple of specimens of *Opsimus quadrilineatus* were found, one of them under the wharf at Wrangel, the other resting on a fence, and a single dead *Phymatodes* was taken on a window. Not a single Chrysomelid was secured, and beating trees yielded only two specimens of a *Magdalis*. Two Hylobiini were taken from low sprouts. But little can be said of the insect fauna of the place as regards the other orders. Hymenoptera were scarce, Lepidoptera by no means common, and Diptera numerous only in individuals. A large species of Dragon-fly was the chief representative of the Neuroptera, while of Orthoptera there seemed to be a total lack. The few Hymenoptera that were taken were mostly Humble-bees, captured around the blossoms of white clover.

Having spent several days on the island I determined to make a trip to the mainland, and engaged, for the purpose, a white trapper and an Alaskan Indian, intending to send them after mammals while I employed my own time collecting insects. We left Fort Wrangel early one morning, and about half past four next afternoon reached our destination—about twenty-five miles from Fort Wrangel—which was to be my stopping place for two days. Next morning I sent my men across the bay with instructions to ascend the snow-capped mountains opposite, in search of the mountain goat, and to bring back any insects that they might come across. Then, as it was raining and all vegetation was soaked, I could do little but turn over a few logs along the beach and search under seaweed for Staphylinidæ. I was rewarded by finding a *Liparocephalus*, but took little else, and filled out the day by skinning birds shot on the way down.

The night passed without interruption, except that caused by the cries of a captive baby seal which we had placed in a pen back of the camp—cries of the most homesick intonation, calculated to melt the heart even of an entomologist without babies of his own. Morning dawned clear at last and promised a good day for collecting, so I lost no time in getting out and to work, with better success in some directions than on the island. By beating I took a few *Syneta simplex*, *Corymbites caricinus*, *C. tarsalis* and *Anaspis rufa*. A number of *Anthobiums* were found and one or two examples each of *Leptalia macilenta* and *Pachyta monticola*, but this was about all of the beetles, the remainder of the catch consisting of flies, moths and a few Hymenoptera. Midges and mosquitoes were an almost intolerable nuisance, and it was quite a relief to get back to the cabin, build a "smudge" and look over the day's catch. In the evening my men came back without the goat, though they had shot one away up towards the summit of the mountain and found the difficulties in bringing down the skin and necessary parts of the skeleton so great that the attempt was abandoned. However, they brought down a *Donacia*, which they had found in a snow-bank at a considerable altitude, an *Eros* and a *Rhyncholus*, all of interest from the locality in which they were taken. Both men were so weary that they said they were too tired to pick up any of the "bugs" they came across on the way down. Our return trip took us only a single day, and next day I was on hand to resume my entomological labors at Fort Wrangel.

Leaving the Stikine River country for discussion in another paper, but two points remain to be spoken of—Hunter's Bay on Prince of Wales Island (if we may rely on the information as to locality given by officers of the steamer), and Metlakahtla or Port Chester, a large Indian settlement under direction of a missionary. At Hunter's Bay a few hours were spent with fair success, the same general character of country obtaining as in other places spoken of though some of the species of beetles were not found elsewhere. *Pterostichus castaneus*, *P. amethystinus*, *Epuræa truncatella*, a fine Byrrhide, *Pedilophorus acuminatus*, a Scydmænid of considerable size, and a number of *Xyloterus bivittatus* were seen. At Metlakahtla the rain again interfered, but a few other species were added to my list, among them *Pterostichus validus* and *Megapenthes stigmosus*. All of the narrow coast strip as well as the islands which constitute southern Alaska consists of rocky and rugged hills with very little variety of soil or vegetation, so that an entomologist would hardly expect to find a great variety of species. Every spot seems, however, to yield something not found at others, and doubtless much that is new yet remains to be discovered. The difficulties of exploration have rendered anything more than a superficial examination out of the question, except in isolated localities, and the day is yet far distant when we shall be able to say that our knowledge of the Alaskan insect fauna approaches completeness.

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## Notes on the COCCINELLIDÆ observed in San Diego Co., Cal.

By F. E. BLAISDELL, M.D.

*Anisosticta seriata* Melsh.—Plentiful in September. Occurring along the bay-shore in favorable localities. Large numbers are on the wing during warm sunny days; when at rest, clustered in the tops of small shrubs and in the ice-plant (*Mesembryanthemum crystallinum*).

*Megilla maculata* DeG.—Rare. Occurs in the eastern portion of the country, along the Colorado River.

*Megilla vittigera* Mann.—Quite plentiful in Summer on sedges along water courses.

*Hippodamia ambigua* Lec.—Common everywhere.

*Hippodamia convergens.*—Guér.—Abundant. Interbreeds with the preceding species; both congregating during the colder months of the year under bark on trees, and in the dead leaves heaped about the bases of clumps of sycamores, where they can often be observed in immense numbers.

*Hippodamia parenthesis* Say.—Very rare. Occurs on squash vines at Poway. Identical with eastern examples in my collection.

*Coccinella 9-notata* Hbst.—Plentiful. Confined to the coast region; not observed in the interior—at least, fourteen years' collecting has failed to discover it at Poway (fourteen miles from coast, elevation 700 feet) and higher altitudes.

*Coccinella californica* Mann.—Very common. This species, besides being aphidivorous, feeds upon the buds of the wild sunflower (*Helianthus californica*). Interbreeds with the preceding species.

*Coccinella sanguinea* Linn.—Plentiful throughout the county.

*Coccinella abdominalis* Say.—Not common. Frequents citrus groves, loco-weed (*Astragalus leucopsis*), and pig-weeds (*Chenopodium*).

*Psyllobora tædata* Lec.—Plentiful on plants along water courses and in vineyards. Have observed them feeding upon a small aphis infesting the under surface of the grape leaf, where the beetle was also noticed in all stages of development.

*Chilocorus cacti* Linn.—Quite abundant in certain localities upon *Agave americana*, *Astragalus leucopsis*, and citrus and olive trees infested with the Black Scale.

*Exochomus pilatei* Muls.—Rare. Occasionally taken with the preceding species on *Astragalus leucopsis*.

*Exochomus marginipennis* Lec.—Moderately common on different flowering shrubs, especially *Prunus demissus*.

*Scymnus lophanthæ** Blais.—Vortriede's Ladybird is not widely distributed, occurring mostly on the Coronadian peninsula. In color, the elytra are a shining black, with a feeble purpurescent lustre, and not *strongly metallic* as stated in my descrption in ENT. NEWS, March number p. 51. Post-coxal arcs distinct in outline, semi-circular; outer margin feebly concave, terminating at apex of metathoracic episternum.

*Scymnus marginicollis* Mann.—Plentiful everywhere.

Several undetermined species of *Brachyacantha*, *Hyperaspis* and *Scymnus*.

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* We are informed by the Agricultural Department at Washington that this is one of the introduced Australian species, the name of which has not yet been ascertained.—ED.

# A new species of CRIORHINIA and Notes on Synonymy.

By Dr. S. W. WILLISTON, Lawrence, Kan.

**Criorhinia coquilletti** n. sp. ♂.—Front separated by nearly the width of the ocelli; ocellar prominence shining black; front below and the face covered with dense, light yellow pubescence and pollen, and, on the sides of the face above, with long, light yellow pile; cheeks broadly shining black. Antennæ brownish red, first joint but little longer than the second, third joint much broader than long, produced somewhat acutely above to the base of the arista. Proboscis moderately elongate. Thorax deep, shining black; on the dorsum, metallic; the color, however, is largely concealed beneath dense, long pile, which is yellow in front of the wings, both on dorsum and on the pleuræ, and black behind the wings. Abdomen deep black, shining, somewhat metallic, on the fourth segment markedly so; pile long, moderately dense, on the first three segments black, [slightly intermixed on the third], on the fourth segment yellow. Legs deep reddish brown or reddish black; the knees, the narrow base of the tibiæ, and the basal joints of the four anterior tarsi yellowish; pile black. Wings brown on the anterior and distal parts; subhyaline behind. Length 9—10 mm.

*Hab.*—Southern California. The specimen upon which the foregoing description is based, was sent me by my friend, Mr. D. W. Coquillett, who had recognized it as belonging to a new species. The species is closely allied to *C. lupina* Will., but differs in having the first antennal joint less elongated, in having the third joint more acute above, a shorter proboscis, and in the absence of the facial stripes, etc. I have seen but very few species in this family since the publication of my "Synopsis." Several of these, of not a little interest, will be shortly described by Mr. W. A. Snow. Since my studies of the North American forms, however, I have had the opportunity of studying nearly three hundred species from Central America, the West Indies and South America. The nomenclature of a few North American species is affected by the results of these studies, as follows:

**Melanostoma stegnum** Say, Journ. Acad. Phil. vi, p. 163; Compl. Wr. ii, p. 358 [*Syrphus*]; Williston, Biol. Centr.-Amer. Diptera, iii, p. 10.=*Melanostoma tigrina* Osten Sacken, Western Dipt. p. 323; Williston, Synopsis, etc., p. 47, pl. iii, fig. 8.

**Melanostoma mellinum** Linné, etc. I identify *M. pruinosum* Bigot as a closely allied, but distinct species.

**Baccha clavata** Fabricius, Ent. Syst. iv, p. 298 [*Syrphus*]; Syst. Antl. p. 298; Wiedemann, Auss. Zweifl. Ins. ii, p. 94; Schiner, Reise d. Novara, Diptera, p. 341; Williston, Trans. Amer. Ent. Soc. xv, p. 270; Biol. Cent.-Amer. Diptera, iii, p. 33.=*Baccha babista* Walker, List, etc., iii, p. 549; Williston, Synopsis, p. 117, pl. iv, fig 9.=*Baccha facialis* Thomson, Eugen. Resa, Ins. p. 504.=*Spazigaster bacchoides* Bigot, Ann. Soc. Ent. Fr. 1883, p. 326.

**Ocyptamus trigonus** Wiedemann, Auss. Zweifl. Ins. ii, p. 125 [*Syrphus*]; Schiner, Reise d. Novara, Diptera, p. 346; Williston, Trans. Amer. Ent. Soc. xv, p. 265; Biol. Centr.-Amer. iii, p. 30.=*Baccha torva* Williston. Synopsis, etc., p. 124. Males which seem to be of this species have the wings hyaline.

**Volucella pallens** Wiedemann, Auss. Zweifl. Ins. ii, p. 204; Williston, Trans. Amer. Ent. Soc. xv, p. 275; Biol. Centr.-Amer. Diptera, iii, p. 53. =*Volucelia sexpunctata* Loew, Wien. Ent. Monatschr. v, p. 38; Centur. vi, 37; Williston, Synopsis, etc., p. 141, pl. vi, fig. 2.

**Eristalis vinetorum** Fabricius, etc. *Eristalis thoracica* Jaennicke is not a synonym of this species, but of *E. obsoletus* Wiedemann.

**Eristalis albifrons** Wiedemann, Auss. Zweifl. Ins. ii, p. 189; Roeder, Stett. Ent. Zeit. 1885, p. 341; Williston, Trans. Amer. Ent. Soc. xv, p. 283; Biol. Centr.-Amer. iii, p. 62.=*Eristalis albiceps* Macquart, Dipt. Exot. ii, p. 56; Williston, Synopsis N. Amer. Syrphidæ, p. 172.=*Eristalis seniculus* Loew, Centur. vi, p. 63.

**Eristalis scutellaris** Fabricius, Syst. Antl. p. 190 [*Milesia*]; Wiedemann, Auss. Zweifl. Ins. ii, p. 159; Macquart, Dipt. Exot. ii, 2, p. 41; Schiner, Novara Exped. p. 364; Williston, Trans. Amer. Ent. Soc. xv, p. 279; Biol. Centr.-Amer. iii, p. 63.=*Palpada scutellata* Macquart, Hist. Nat. Dipt. i, p. 513; Dipt. Exot. ii, 2, p. 38 [*Eristalis*].=*Eristalis fascithorax* Macquart, Dipt. Exot. 4 Suppl. p. 139.=*Doliosyrphus scutellatus* Bigot, Ann. Soc. Ent. Fr. 1883, p. 222.=*Doliosyrphus rileyi* Williston, Synopsis, p. 178, pl. viii, fig. 8. A wider acquaintance with allied species makes me disinclined to accept the genus *Doliosyrphus* Bigot.

**Tropidia albistylum** Macquart, is a distinct species, a specimen of which is in the National Museum.

**Xylota elongata** Williston, Synopsis, p. 234, is a synonym of *X. angustiventris* Loew.

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## NEW JAMAICA TACHINIDÆ.—I.

By C. H. Tyler Townsend.

The following species was transmitted to me by Mr. Cockerell Curator of the Museum, with the record that it was taken at Cinchona, Jamaica, a place which is high up in the mountains.

**Pseudohystricia exilis** n. sp. Eyes brown, with some bronzy reflections, pubescent, front averaging one-third width of head, frontal vitta blackish, velvety, hardly one-fifth width of front; five posterior pairs of frontal bristles directed backward, two orbital bristles; front, face and cheeks of a clear golden-yellow, shading to brassy or cinereous in spots on front, pile on sides of face and cheeks golden-yellow; antennæ brownish, first two joints dark, base and posterior half of third rose-rufous, third joint one and a half times as long as second; arista blackish, first two joints elongate and of equal length; proboscis black, palpi elongate, widened and enlarged toward tip, rufous-yellow, occiput brassy, thickly clothed with brassy pile. Thorax black, thinly silvery, with four narrow vittæ, the outer ones heavier and interrupted at suture; humeri and pleuræ black, very faintly silvery; scutellum deep brownish rufous, very spiny. Abdomen deep brownish rufous, with purplish reflections, densely beset everywhere, except on sides anteriorly, with spiny macrochætæ; venter with macrochætæ on median portion and on sides posteriorly. Legs black, front femora somewhat silvery on outside, tibiæ spiny, especially middle and hind pairs, claws and pulvilli a little elongate, pulvilli tawny yellowish; front tarsi not dilated. Wings brownish fuscous, veins blackish at base; tegulæ fuscous, halteres rufous. Length of body 11 mm.; of wing 9.5 mm.

Described from one specimen; Cinchona, Jamaica. Collected by Mr. W. Fawcett, Head of the Botanical Department of Jamaica.

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## Our ATYPIDÆ and THERAPHOSIDÆ.

By Nathan Banks, Washington, D. C.

These two families of spiders contain what are commonly called tarantulas, the Mygalidæ of older authors. They have four lung-sacs, the fang of the mandibles moves vertically, the legs are short and stout. The two families may be tabulated thus:

Maxillæ broadened at base, palpi lateral . . . . . . **Atypidæ.**
Maxillæ not broadened at base, palpi terminal, or almost so. **Theraphosidæ.**

Of Atypidæ we have but one genus, *Atypus;* two species of which have been described from the Western States. *A. bicolor* Lucas may, if any one is fortunate enough to obtain a specimen, form another genus on account of the arrangement of the eyes. It is probably the species to which Hentz refers as the "*A. rufipes* found by Mr. Milbert." *A. bicolor* Lucas is black, with red legs; only known from "Philadelphia." *A. niger* Hentz is wholly black; from Mass., Md., D. C., Va., N. C.

The Theraphosidæ may be divided into two subfamilies:

Inner distal angle of maxillæ slightly prolonged, palpi somewhat lateral. **Eriodontinæ.**
Inner distal angle of maxillæ not prolonged, palpi terminal. **Theraphosinæ.**

The Eriodontinæ are represented by three genera:

A. S.·E. the largest eyes . . . . . . . . . . . 2.
A. M. E. the largest eyes . . . . . . . . . **Anthrodiætus.**
2.—S. E. farther apart than M. E. . . . . . **Myrmekiaphila.**
S. E. not farther apart than M. E. . . . . . . **Nidivalvata.**

In *Anthrodiætus* the S. E. are widely separated, the anterior row is longer than the posterior row and recurved. One species, *A. unicolor* Hentz is described from Alabama. *Myrmekiaphila* has the S. E. widely separated, but the anterior row is not longer than the posterior row, and is slightly procurved. One species, *M. foliata* Atk. is described from North Carolina. *Nidivalvata* has the S. E. close together or touching, anterior row procurved, a little shorter than the posterior row. Two species are described, both from North Carolina, by Prof. Atkinson:

S. E. and P. M. E. touching, in one group . . . . . **N. marxii.**
S. E. and P. M. E. distinctly separated . . . . . . **N. angustata.**

The Theraphosinæ may be divided into two tribes:

Three claws to tarsi . . . . . . . . . . . . **Trionchi.**
Two claws to tarsi . . . . . . . . . . . . **Dionchi.**

The Dionchi have one genus, *Eurypelma*, in Western States, of which five species are described. These are the genuine tarantulas. As the species are extremely close, a key will not be given, but the species arranged in two series according to locality. California: *E. californica* Auss., *E. rileyii* Marx, *E. leiogaster* Auss. Southern W. S.: *E. hentzii* Girard, La., Tex., Kans.; *E. steindacherii* Auss., N. Mex. *E. hentzii* is the most common; *E. mordax* Auss. is the same as *E. hentzii* Girard.

The Trionchi are divided into two groups:

Median groove longitudinal . . . . . . . . **Mecicobothri.**
Median groove transverse . . . . . . . . . **Aepicephali.**

### Group MECICOBOTHRI.

Spinnerets four . . . . . . . . . . . **Brachybothrium.**
Spinnerets six . . . . . . . . . . . . . . 2.
2.—Eyes about equal in size, third article of spinnerets but little longer than second . . . . . . . . . . . **Atypoides.**
A. M. E. much smaller than others, third article of spinnerets much longer than second . . . . . . . . . . **Hexura.**

*Brachybothrium* is represented by two species, one *B. pacificum* Simon from Wash. State, the other *B. accentuatum* Simon from

North Carolina. *Hexura* and *Atypoides* have each one species: *H. picea* Simon from Wash. State; *A. riversi* Cambr. from Cala.

### Group Aepicephali.

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| Tibia III flattened at base | **Pachylomerus.** |
| Tibia III not flattened at base | 2. |
| 2.—Lip much longer than broad at base | 5. |
| Lip at most as long as broad at base | 3. |
| 3.—Abdomen truncated behind | **Cyclocosmia.** |
| Abdomen rounded behind | 4. |
| 4.—Mandibles pointed in front | **Ctenisa.** |
| Mandibles rounded in front | **Bolostromus.** |
| 5.—Eyes crowded together in two curved parallel rows | **Madognatha.** |
| Eyes more separated, in two rows not parallel | **Chlosterochilus.** |

*Cyclocosmia truncata* Hentz from Alabama. *Ctenisa californica* Cambr. from California. *Bolostromus fluviatilis* Hentz from Alabama. *Maclognatha abbottii* Lucas from Georgia and "Philadelphia." *Chlosterochilus gracilis* Hentz from Alabama. *Chlosterochilus pertyii* Lucas, Ann. Ent. Soc. Fr., Second Series, Vol. III, 1845, p. 60; not Vol. VI, p. 377, as given by Marx in the Catalogue. This was described as *Actinopus* by Lucas, but the eyes do not differ in arrangement from *Ch. gracilis;* the A. S. E. are, however, much larger than the A. M. E., while in *Ch. gracilis* the A. S. E. are about equal to the A. M. E. It was described from "Amerique du Nord." Dr. Marx, in his Catalogue, also places *Pachyoscelis rufipes* and *Theragretes walkenaerii* (the male of *Sphodros abbottii* according to Walckenaer) as in our fauna. This is not the case, as may be seen from the following quotation from Lucas in his article on the subject: . . . "car l'espece que M. Walckenaer regarde comme le male du *S. abbottii* ♀ se trouve dans le meme localité que mon *Pachyloscelis rufipes*, l'un et l'sutre ont eté trouves au Brésil dans les Campos geraes."

Of *Pachylomerus* we have two species. There seems to be considerable trouble in the genus. Prof. George Atkinson described three species as new, and redescribed *P. carolinensis* Hentz, and suggested that *P. solstitialis* Hentz was the male of the same species. It is very probable that *P. carolinensis* and *P. solstitialis* are the same, though there may be a slight difference in the proportionate width of the cephalothorax. But as *P. solstitialis* comes before *P. carolinensis* in the descriptions, and as it is a male, I think there is no doubt but what the species should be called *P. solstitialis* Hentz. Moreover, the species identified, described and figured by Prof. Atkinson as *P. carolinensis* does not agree with Hentz's figure of that species. But *P. turris* Atk. does agree with Hentz's figure of the eyes. Therefore I consider *P. turris* = *P. carolinensis* = *P. solstitialis*. I see no characters of specific value between Prof. Atkinson's *P. carabivorus*, *P. carolinensis* and *P. quadrispinosus*. The variation of width in the cephalothorax is so slight as to be of no value; the arrangement of spines and teeth on claws are not of specific importance. The males are not known. There is no great difference in the eyes. I thus write the species under one name, *P. carabivorus* Atk., at least until the males show differences in the palpal structure. The two species may be separated thus:

P. S. E. as near to A. S. E. as to P. M. E. . . . **P. solstitialis.**
P. S. E. nearer to P. M. E. than to A. S. E. . . . **P. carabivorus.**

*P. audouinii* Lucas, 1837, described from "Amerique du Nord;" if from W. S. may be one of the above species. Lucas placed it in *Actinopus;* Ausserer says it is a *Pachylomerus;* why, I do not know.

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## A NEW DALMANNIA FROM CALIFORNIA.

By D. W. Coquillett, Los Angeles, California.

Up to the present time only two species of the Conopid genus *Dalmannia* have been reported from America north of Mexico. To these I now add a third, and present a table for identifying these three species :

1. Scutellum and humeri marked with bright yellow . . . . . 2.
   Scutellum and humeri wholly black . . . . . **vitiosa** n. sp.
2. The yellow on hind margins of abdominal segments three and four prolonged forward each side, nearly crossing the segments; cheeks of male yellow . . . . . . . . . . **picta** Will.
   The yellow not prolonged forward each side; cheeks of male with a large black spot . . . . . . . . . **nigriceps** Lw.

**Dalmannia vitiosa** n. sp. ♂.—Front yellowish brown, darkest on the upper half, where the dark color forms two indistinct stripes; antennæ black, apex of style yellowish; face and cheeks yellow, the former with two brown median stripes; occiput black. Thorax, pleura, breast and scutellum wholly black. Abdomen black, hind margin of the second, third and fourth segments yellow; segments three, four and five each with a median yellow stripe and a broader one each side; venter yellow, a basal triangle and sides before the apex, black. Legs yellow, apices of middle and hind femora, upper side of front femora, tibiæ, except at the apex of each, and whole of tarsi, brownish. Wings grayish hyaline; halteres brown, the knob yellow. Length 4 mm.

Los Angeles County, California. A single specimen.

The second basal and discal cells are united in each wing, but whether this is a permanent character, or simply a defect of this individual specimen, I am unable to say. In all other structural characters it agrees perfectly with *Dalmannia picta* Williston, originally described from Arizonia, but which I have collected in various parts of southern California.

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NOVEL SMUGGLING.—The account of the smuggler recently arrested by the Customs authorities in this city, who had a quantity of diamonds under a porous plaster on his back, reminds me of an even more novel device that came to my knowledge some years ago. A Philadelphia physician was attacked by that most seductive craze, the collector's mania for beetles and bugs. After this had been going on for some years and the result had become one of the finest collections of Coleoptera anywhere extant, he began to find that the mad desire for very rare specimens to fill up the occasional gaps in his otherwise perfect series of creeping things was too great a drain on his exchequer. To be sure he was a bachelor, under light expenses, and already blessed with a fair inheritance. Then, too, he had built up a considerable practice in that branch of medicine which he described as " leading man at baby matinees." Still, rare bugs come high, and he could not afford the continually increasing drain. Just at this juncture some one seems to have hit upon a very novel expedient. Whether the fertile brain belonged to the doctor, or to a young friend, a scion of one of Philadelphia's oldest and proudest families, who was and is a member of a prominent house of jewelers, I never learned. However that may be, the interest of the story hinges on the fact that certain rare beetles came in from South Africa—the Kimberly diamond fields, in fact—nicely packed in raw cotton, and some of the largest of these were most unaccountably heavy. While the outer anatomy was of most interest to the doctor, who valued these rare specimens as such, the inner anatomy appeared to be of far greater interest to his friend. A careful investigation, I am told, resulted in demonstrating the fact that the added weight in these specimens was due to a certain undigested mineral substance that was found in the abdominal cavities of some of the largest specimens. Though these specimens were pronounced to be herbiferous, still when certain cutting and polishing processes were finished I heard that these mineral substances were found to be "of good color and the first water." Whether the method of thwarting the watchful Customs agents is still in use I cannot say.—*New York Town Topics.*

# ENTOMOLOGICAL NEWS.

Published monthly (except July and August), by the Entomological Section of the Academy of Natural Sciences, of Philadelphia, with the endorsement of the American Entomological Society. It will contain not less than 240 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., JUNE, 1892.

**This** number of the NEWS contains thirty-six pages.

**The** copy for the Elementary article arrived too late for publication in this issue.

**We desire** to thankfully acknowledge, from a friend and patron of science who is interested in the progress of Entomology and who desires to aid ENTOMOLOGICAL NEWS in the publication of useful information, the receipt of a generous contribution which will enable us to publish promptly much interesting material. To those who are endeavoring to make the NEWS a permanent success, and who give freely of their time and talent to that end, such liberal assistance as is given by our kind friend is very helpful and encouraging.

**Notice to authors of papers for the NEWS.**—In the future papers for publication in the NEWS will be limited to three pages for any one month, and those papers largely made up descriptions of species will be limited to two pages. All articles exceeding these limits, if worthy of publication, will be referred to the Publication Committee of the American Entomological Society for publication in its "Transactions."

**We publish** below an interesting extract from the "American Farmer," which has a direct bearing on Entomology, and shows the magnitude and importance of agricultural experimentation. We predict that in the future the interest in Entomology will be largely increased, and also the number of students of this branch of natural history, more especially as it is now being more fully recognized as a study of practical value.

*The magnitude of the Agricultural Experiment Station work in the U. S.*—Few persons realize the vast proportions to which agricultural experiment work has grown in this country. The chief part of the growth has been within the last five years, since the Hatch bill went into operation. By the terms of this law there are appropriated annually by the

General Government $15,000 to each State and Territory that shall accept the terms of the grant and establish and maintain an Agricultural Experiment Station. There is also established in Washington a central office, called the Office of Experiment Stations, in which the results of the station work in the various States are digested and tabulated, and which also has a consulting and advisory interest in the progress and execution of the work.

Under the act of Congress, approved March 2, 1887, known popularly as the Hatch bill, agricultural experiment stations are now in operation in all the States and Territories with the exception of Alaska, Montana and Idaho. In a few of the States more than one station has been established, so that in all 49 are now in operation. In Alabama, Connecticut, Massachusetts, New Jersey and New York, separate stations are maintained wholly or in part by State funds. The total grant of money made last year by Congress for the experimental work amounted to $728,000 for the Hatch bill stations and the office of experiment stations, and $50,000 for the sugar experiments. The amount expended in experimental work by the grass stations and entomological division is not accurately known, but reaches probably not less than $20,000, making the total expenditure by the Department of Agriculture for experimental work in round numbers $800,000. In regard to the particular amounts expended by the Department of Agriculture in direct co-operation with the experimental work in the several States, the following list will be found reliable: For entomological work—Nebraska, $600; Iowa, $600; Ohio, $1500; Michigan, $1000. For botanical work—Texas, $700; Arizona, $700; Colorado, $1000; Utah, $500; South Dakota, $500; Wyoming, $500; North Dakota, $500; New Mexico, $500; Louisiana, $750; Florida, $250; Georgia, $500; North Carolina, $500; Mississippi, $1600. In addition to this the State and private contributions to this work amount to fully $200,000, making in all the sum of $1,000,000 devoted annually to the cause of the experimental promotion of Agriculture. Five hundred persons are employed actively in this work. Among these are 71 directors, 120 chemists, 47 agriculturists, 50 horticulturists, 30 botanists, 36 entomologists, 22 veterinarians, 14 meteorologists (excluding all employed by the Weather Bureau), 4 biologists, etc. During the year 1891, excluding publications coming directly from the Department, the stations published 49 annual reports and 255 bulletins. The mailing list of the stations (exclusive of the Department lists) now contains 350,000 names. About 40,000,000 pages devoted to information on agricultural subjects were printed and distributed during the year, not counting the Department publications. This does not include the hundreds of newspapers which publish accounts of the work. It is safe to say that at least 10,000,000 of our reading people read more or less of this work every year. In addition to this add the number reached directly by the Department, and the vastness of the interests of this work, measured by the number of people directly benefitted, is at once apparent.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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**To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.**

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Mr. E. V. BEALES, of Denver, Col., is doing a good work in trying to interest the boys and girls of his city in Entomology by means of popular articles in the *Denver Sun*. It is said that many nets are to be seen in Denver this Spring. This should stimulate others to try and make young entomologists in the same way.

Rev. C. J. S. BETHUNE, editor of the "Canadian Entomologist," spent the month of March in the Bermudas in order to get over an attack of grip. We are glad to say he has returned in good health.

BARON VON FELDER, of Vienna, has sold his famous collection of butterflies to Hon. Walter Rothschild, of London, for $25,000. The Baron, who is now seventy-eight years of age, believed that he was too old to care for his collection properly. It is said that Hon. Walter Rothschild intends to leave his collection, now the finest in the world, to the British Museum when he dies.—*Newspaper clipping.*

MISS PALMER'S "SILK WORMS."—Chambersburg, Pa., January 28th. Pretty Miss Aloysius Marguerite Palmer, formerly of this city, and whose parents still reside here, was yesterday convicted in the Federal Court at Topeka, Kan., of fraudulently obtaining $3000 from E. E. McClelland, of Topeka, claiming that she sold him silk worm eggs, though she really sold only mustard seeds. She is liable to imprisonment for from one to five years.—*Newspaper clipping.*

TRANSACTIONS of the American Entomological Society, vol. xix (1892). —Pages 89–128 inclusive, have been printed since our last issue, containing the continuation of C. H. T. Townsend's "Notes on North American Tachinidæ. Paper III."

DOES ACANTHIA PIPISTRELLI OCCUR IN NORTH AMERICA?—In ENT. NEWS, Vol. I, pp. 26–27, is a note by Mr. C. P. Gillette, stating that he has found numerous specimens of an *Acanthia* in the nests of Barn Swallows, and that Mr. Ashmead had determined the species as *A. pipistrelli* (not *papistrilla*, as the name is written in Ent. News). As *A. pipistrelli* does exclusively live on Bats (*Vespertilio pipistrellus* and other species) and in their nests, the American specimens must certainly belong to *A. hirundinis*, which is not uncommon in the nests of Barn Swallows in North and Central Europe. *A. pipistrelli* is a rare species, which has been found in Central Europe and once in great abundance in Sweden in an old hollow tree inhabited by bats. It is, however, very possible that both *A. pipistrelli* and *A. columbaria*, which lives in dove-cots, also occur in N. America, although they have been overlooked. Descriptions and figures of these three species are published by Jenyns in Annals of "Natural History" 1839, pp. 241–244, and by Schenck in "Entom. Nachrichten" 1877, pp. 182–183.—Dr. E. Bergroth, Tammerfors, Finland.

Fourth Annual Meeting of the Association of Economic Entomologists.—In accordance with an action of the Association, taken at the Washington meeting, the fourth annual meeting will be held at Rochester, N. Y., two days prior to the meeting of the American Association for the Advancement of Science. All members intending to present papers are requested to forward titles to the undersigned before August 1st, in order that the program may be prepared in proper season. The proceedings of our meetings are attracting the attention of working entomologists of other countries, and it is to be hoped that members will spare no efforts to make the coming meeting even better than those which have preceded it. Owing to the continued ill-health of President Lintner, and in order to relieve him of as much labor as possible, all correspondence, unless of a nature necessitating his attention, may be addressed to the Secretary, F. M. Webster, Columbus, Ohio.

I find from Dr. McKnight's paper in April News concerning the Lepidoptera of the Adirondacks, that the fauna of that region is very similar to ours at Franconia. I have taken there every moth of his list with these exceptions: *Lithosia candida*, *Adoneta spinuloides*, *Arzama diffusa*, *Pseudanthræcia coracias*, *Pityolita pedipalalis*, *Tortricodes bifidalis*, and perphaps three or four species of *Agrotis*, *Tæniocampa* and *Hadena*, as these last are not yet fully identified in my collection. Of *Lophopteryx elegans* Strk. I have a fine pair, male and female. They were taken at light in June, 1886, and were named for me by Mr. Hy. Edwards. Like Mr. McKnight's specimen, mine are suffused with brown from base to subterminal space. In other respects they answer to description of *Notodonta simplaria* Hy. Edw.—Annie Trumbull Slosson.

Capturing Bembidium and other small Coleoptera.—It may prove a help to some of our numerous Coleopterists to know how to easily collect these active little beetles which are so common along the shores of lakes and rivers. Is there a collector who has not endeavored to pick them up between his (her?) thumb and forefinger and transfer the specimens to the cyanide or alcohol bottle, only to find them *non est* just as he supposes they are safely inside. Here is a method that worked very successfully with me while at Chautauqua, N. Y., during July and August of last Summer. Procure a two-drachm vial one-quarter full of chloroform or ether; a larger bottle containing alcohol and a penny camel's-hair brush. Now, having found a locality where the beetles are plenty, drop the brush in the ether and apply it to the specimens wanted. It is surprising to see how quickly they are put to sleep. Almost immediately they may be transferred to the alcohol bottle on the tip of the brush and you are ready for more. In this manner hundreds can be taken within a short time, and I am sure it would work admirably with the insects of other orders besides Coleoptera, especially where the species are minute, but too quick to take in the usual manner. Try it.—LEE B. WALTON, Kenka College, N. Y.

AILANTHUS FOLIAGE AND THE ROSE-BEETLE.—Concerning Professor Troop's note in the May number of ENTOMOLOGICAL NEWS, the New Jersey experience has been that the insect favors the blossom in preference to the leaves, which are little eaten. With us the *Ailanthus* is known as the "tallow tree," and the observation that dead beetles in abundance were found under the trees, led to the experiment with decoctions of the blossoms. The secret of the effect observed is in the word "later," that is, only late in the season the worn out specimens feed on *Ailanthus* and die naturally. I have seen the ground beneath a chestnut tree strewn in the same way; but all specimens were old, and had died of some senile weakness rather than from any poison contained in the food. The fox glove only seems to act as a poison on the virile insect, and this used as a decoction acted too slowly to be effective in protecting vineyards. Yet, it may be well to try a decoction of *Ailanthus* foliage. Finally, a printer's error makes it Bulletin "32" instead of 82.—Prof. J. B. SMITH.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for F. D. Twogood, D. G. Cox, D. B. Young, Charles U. Clark, J. S. Hine, W. T. Davis, M. V. Slingerland, J. H. Bomberger, C. H. T. Townsend, Henry Bird, C. M. Weed.

# Entomological Literature.

INDIAN MUSEUM NOTES, II. Calcutta, 1891.—No. 1. (1 pl.) Economic Entomology: Miscellaneous Notes, E. C. Cotes, figs. A new species of Tineidæ,* Lord Walsingham, figs. The Baluchistan Melon Fly,* J. M. F. Bigot. American blight, E. T. Atkinson. Descriptions of new Coccidæ,* W. M. Maskell. A Darjiling Sal pest, G. C. Dudgeon. A new Psychid injurious to Sal,* F. Moore.—No. 2. The wild silk insects of India, E. C. Cotes, 14 pls.—No. 3. On white insect wax in India, E. C. Cotes, 1 pl.—No. 4. The locusts of Bengal, Madras, Assam and Bombay, id, 1 pl. —No. 5. Methods adopted in Tunis for destroying locusts, R. Drummond-Hay.

ANNALS AND MAGAZINE OF NATURAL HISTORY (6), ix, 52, London, April, 1892.—Description of a new genus and some new species of Heterocera from Central America, H. Druce. Descriptions of new genera and species of Pyralidæ contained in the British Museum collection.*† W. Warren. On some undescribed Cicadidæ, with synonymical notes,*† W. L. Distant.

THE IRISH NATURALIST, I, 1, Dublin, April, 1892. Edited by George H. Carpenter and Lloyd Praeger.—The Coleoptera of the Armagh district, Rev. W. F. Johnson.

LE NATURALISTE, Paris, April 1, and May 1, 1892.--Cabbage worms, P. Chretien, figs. Dichotomous tables for determining the European species of *Colias* (cont.), K. Bramson. Description of new Lepidoptera,* P. Dognin. On difference in development in Coleoptera, L. Planet, figs.

HARDWICKE'S SCIENCE GOSSIP, London, April, 1892.—A few remarks on our commonest spiders, K. H. Jones. Secreting glands in the feet of flies, W. Jenkinson, figs.

WEST VIRGINIA AGRICULTURAL EXPERIMENT STATION, Bull. No. 21, Charleston, W. Va., 1892.—Methods of dealing with injurious insects, A. D. Hopkins..

COMPTE RENDU, L'ACADEMIE DES SCIENCES, Paris, March 28, 1892.—On the mode of articulation of the abdominal rings (zigzag articulation) in Hymenoptera, G. Carlet.

COMPTE RENDU, SOCIETE DE BIOLOGIE, Paris, April 1, 1892.—Origin of the achromatic nuclear spindle in the seminal cells of *Scolopendra*, A. Prenant. The alar nerve in some apterous Coleoptera, A. Binet.—April 30th. Comparative researches on the organization of the brain in the principal groups of Arthropods, H. Viallanes. The nerve of the balancer in some Diptera, A. Binet.

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* Contains new species other than North American. † Contains new genera.

BULLETIN DE L'ACADEMIE ROYALE DE BELGIQUE (3), xxiii, 2, Brussels, 1892.—Protective resemblance in the animal kingdom, F. Plateau.

JOURNAL OF THE TRINIDAD FIELD NATURALISTS' CLUB, I, 1, Port-of-Spain, April, 1892.—This is the first number of a new journal issued under the direction of a publication committee consisting of Henry Caracciolo, Esq., president, Prof. P. Carmody, F. I. C., Syl. Devenish, Esq., M. A., and Mr. R. R. Mole. The journal has for its object to keep those members of the Club in Europe, America, Venezuela, and throughout Trinidad *en rapport* with what the Club accomplishes. One of its special features will be Economic Entomology. Mr. Caracciolo is a valued correspondent of the NEWS, and we wish him and his colleagues success in their new undertaking.

SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Compte Rendu, March 5, 1892.—The African Gomphina,*† E. de Selys-Longchamps. Insects of western Bengal: xv, Coprophagous Lamellicornia, H. von Schoenfeldt; xvi, Hydrocanthari,* Dr. M. Regimbart; xvii, List of a collection of Lepidoptera, Dr. H. Robbe. Lepidoptera from the Congo,* id. Materials for a study of the Tabanidæ of Belgium, L. Coucke.

OREGON AGRICULTURAL EXPERIMENT STATION, Bull. No. 18, Corvallis, Ore., 1892.—Economic Entomology, F. L. Washburn.

JOURNAL OF THE HORTICULTURAL SOCIETY, Columbus, Ohio, December, 1891.—Insect parasites, F. M. Webster, figs.

ENTOMOLOGISCHE NACHRICHTEN, xviii, 6, Berlin, March, 1892.—*Brachyta bifasciata* Oliv. v. *caucasica*, C. Rost. List of Lucanoidæ, Scarabeidæ, Buprestidæ and Cerambycidæ collected near Nienghali in South China,* A. F. Nonfried.—7, 8, April, 1892. A new variety of *Lycæna* from Russia,* L. Krulikowsky. Sawfly studies,* Dr. Kriechbaumer. A new *Psilomastax*, id. On *Tryphon punctus* Grav., R. v. Stein. Contributions to the Coleopterous fauna of Africa and Madagascar,* A. F. Nonfried. Preliminary descriptions of three new Lepidoptera from Bismarckburg in Togoland, German West Africa,* Dr. F. Karsch.

NATURE, London, April 7, 1892.—On insect colors II, F. H. P. Coste. —April 21, 1892. Pigments of Lepidoptera, F. G. Hopkins.

LEPIDOPTERA INDICA, by F. Moore, London: L. Reeve & Co., 1892. Pt. ix, pp. 177–208, pls. 65–71.

ZOOLOGISCHER ANZEIGER, Leipzig, April 11, 1892.—The development of the coxal gland in *Phalangium*, J. Lebedinsky, figs. New observations on symbiosis between Ants and Acacias, Dr. C. Keller. The Acacia-Crematogaster by Prof. Keller from Somaliland,* A. Forel.—April 25th. Labial palps of Hemiptera, Dr. N. Leon, fig.—May 2d. Systematic list of the Canarian Dermaptera and Orthoptera, with diagnoses of new genera and species,*† Dr. H. Kraus.

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* Contains new species other than North American. † Contains new genera.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, liii, 4, Leipzig, April 5, 1892.—On the phylogeny and ontogeny of the wing-veins of butterflies, Dr. A. Spuler, 2 pls.

THE AMERICAN NATURALIST, Phila., March, 1892.—Descriptions of new North American Bees, C. Robertson.

THE BRITISH NATURALIST, London, May, 1892.—The secondary sexual characters of the British Coleoptera, J. W. Ellis. Local lists, etc.

BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xxxvi, 2, Berlin, March, 1892.—New African, Central American and East Asiatic Melolonthidæ and Rutelidæ,* A. F. Nonfried. To the knowledge of the willow gall-flies,* J. J. Kieffer, 1 pl., figs. Communications on gall-flies,* id., figs. Arachnida from Ceylon and Minikoy collected by Drs. P. and F. Sarasin,*† Dr. F. Karsch, 3 pls. Second notice on the Apiocerina, C. R. Osten Sacken. *Arota rosaura* Karsch, Dr. F. Karsch, fig. Review of the Locustodeæ collected by Dr. Paul Preuss at the Barombi Station in Cameroons,*† id., figs. List of the Rutelidæ described after the publication of the Munich Catalogue, and Additions to the same, A. F. Nonfried. Further contributions to the beetle fauna of southern Asia and New Guinea,* id. On gall-fly larvæ, E. H. Ruebsaamen, 1 pl. New gall-flies and galls,* id. Synopsis of the described genera and species of the Blepharocediæ, C. R. Osten Sacken. On the Chætotaxy of *Cacoxenus indagator* Lw., id. Synonymy of *Antocha* O. S. and *Orimargula* Mik., id. Additions and corrections to the catalogue of the described species of South American Asilidæ by S. W. Williston in the Trans. Ent. Soc. xviii, 1891, id. New Rhopalocera,*† E. G. Honrath, 1 pl. Little-known butterflies, id. A new *Notodonta*,* id. A local variety of *Biston hirtarius*, H. Heymons. Two new Chinese dragonflies of the family Calopterygidæ,* Dr. F. Karsch. Results of the anatomical research on a lateral hybrid of *Smerinthus populi* L. with some general considerations, H. Tetens, 1 pl. figs. *Epinephele lithonus* var. *mincki*, T. Seebold.

REVUE D'ENTOMOLOGIE, CAEN, x, pp. 199–236.—Description of a new species of *Tropideres*,* Fr. Guillebeau. Contributions to the study of the Pentatomidæ,* Dr. E. Bergroth. Third note on the genus *Phaleria*, C. L. Rey.

THE ENTOMOLOGIST'S RECORD, London, April 15, 1892.—The genus *Acronycta* and its allies, Dr. T. A. Chapman. Ammonia, verdigris and black pins, W. H. Harwood, J. W. Tutt, A. Robinson.

INSECT LIFE, iv, 7 and 8, Washington, April, 1892.—The potato-tuber moth (*Lita solanella* Bd.), Eds., figs. A genus of *Mantis* egg-parasites, id., figs. Notes on the grain *Toxoptera*, F. M. Webster. The larger digger-wasp, C. V. Riley, figs. The habits of *Elasmus*, L. O. Howard, figs. Bees of great value to fruit and seed growers, F. Benton. Some bred West Virginia Braconidæ, A. D. Hopkins. Notes on the habits of some California Coleoptera, D. W. Coquillett. Early published references to some of our injurious insects, F. M. Webster. The color of a host and its relation to parasitism, C. W. Stiles and A. Hassall. The usual numerous notes.

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* Contains new species other than North American. † Contains new genera.

VERHANDLUNGEN DER K. K. ZOOL.-BOT. GESELLSCHAFT IN WIEN, xlii, 1, April, 1892.—On the so-called "stand still stage" in the development of Oestrid-larvæ, Dr. F. Brauer. Four new species of Hymenoptera,* Dr. R. Cobelli. Communications on gall-flies,* E. H. Ruebsaamen, 1 pl. figs. The Austrian species of the genus *Hilara* Melg.,* Prof. G. Strobl.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1892, pt. 1, January-March.—The spider fauna of the Upper Cayuga Lake basin, N. Banks, 5 pls. *Drexelia*, a new genus of spiders, Rev. H. C. McCook, D. D. Greenland Lepidoptera, H. Skinner, M. D., and L. W. Mengel.

TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1892, pt. 1, March, 1892.—New species of Heterocera from the Khasia Hills,*† ii, Col. C. Swinhoe, 1 pl. Additional notes and observations on the life-history of *Atypus piceus*, F. Enock. Notes on *Lycæna* (recte *Thecla*) *rhymnus*, *tengstræmii* and *pretiosa*, G. T. Bethune-Baker, 1 pl. The effects of artificial temperature on the coloring of several species of Lepidoptera, with an account of some experiments on the effects of light, F. Merrifield. On variation in the color of cocoons of *Eriogaster lanestris* and *Saturnia carpini*, W. Bateson. On the classification of the Geometrina of the European fauna,† E. Meyrick, 1 pl.

ARCHIVES DE PHYSIOLOGIE NORMALE ET PATHLOGIQUE (2), iv, 2, Paris, April, 1892.—The intermediary body of Fleming in the seminal cells of *Scolopendra* and *Lithobius*, A. Prenant, 1 pl.

ZOOLOGISCHE JAHRBUCHER, vi, 2, Jena, March 30, 1892.—The tree whiting, *Aporia cratægi* Hb., Dr. K. Eckstein. *Tegonotus*, a new Phytoptid genus,* Dr. A. Nalepa, 1 pl.

BOLLETINO DELLA SOCIETA ROMANA PER GLI STUDI ZOOLOGICI, I, 1 and 2, Rome, 1892.—On species of Hemiptera of the R. Museo Zoologico of Rome, Dr. C. de Fiore.

TRANSACTIONS OF THE ACADEMY OF SCIENCE OF ST. LOUIS, v, 3-4, 1892.—Transformations of a Carabid (*Plochionus timidus*) and observations on a Coccinellid enemy of the red spider, J. C. Duffey.

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CANADIAN ENTOMOLOGIST, London, Ont., May, 1892.—Miscellaneous notes on butterflies, larvæ, etc., W. H. Edwards. Two distinguished settlers, W. H. Harrington. New North American Homoptera, iv, E. P. Van Duzee. Packing insects for transportation, H. F. Wickham. Notes on North American Hesperidæ, E. M. Aaron. New North American Microlepidoptera, Prof. C. H. Fernald. Notes and descriptions of Bombylidæ, D. W. Coquillett. A Sarcophagid parasite of *Cimbex americana*, C. H. T. Townsend. Ovipositing in the genus *Argynnis*, H. Skinner. Notes on *Melittia ceto* Westw., J. B. Smith. A new *Ischalia* from Vancouver Island, W. H. Harrington. Obituary of Abbe Provancher, id.

CANADIAN RECORD OF SCIENCE, v, 1, Montreal, January, 1892.—List of Coleoptera collected in the vicinity of St. Jerome, Que., J. F. Hausen.

NOVA ACTA ACADEMIÆ CAES. LEOP.-CAROL. GERMANICÆ NATURÆ CURIOSORUM, lv, Halle, 1891.—New gall mites,* Dr. A. Nalepa, 4 pls.

BOLLETINO DEI MUSEI DI ZOOLOGIA ED ANATOMIA COMPARATA D. R. UNIVERSITA DI TORINO, No. 115, March 9, 1892.—On the variability of the metasternal apophysis of *Dytiscus marginalis* L., A. Griffini, figs.—116, March 15. On the parasitism of a larva of *Aricia* in a *Carabus*, Dr. E. Giglio-Tos.—117, March 18. A new genus of Syrphidæ, id.—118, March 24. On two genera of Syrphidæ *Rhopalosyrphus* and *Omegasyrphus*, id.

ANALES DE LA SOCIEDAD CIENTIFICA ARGENTINA, xxxiii, 2, 3, Buenos Ayres, February, March, 1892.—New Hemiptera of the Argentine and Uruguayan faunas (cont.),* Dr. C. Berg. Argentine Dipterology, Syrphidæ (cont.), F. L. Arribalzaga.

THE ENTOMOLOGIST, London, May, 1892.—Note on generic characters in the Noctuidæ, J. B. Smith. On some Macro-Lepidoptera collected at Rannoch in 1891, R. Adkin. Notes on British Lepidoptera, the genus *Melanippe* (cont.), R. South. Preliminary list of the insect fauna of Middlesex (cont.), T. D. A. Cockerell. Green and brown pupæ of *Papilio*, F. W. Frohawk, F. P. Bedford.

BULLETIN OF THE OHIO AGRICULTURAL EXPERIMENT STATION (2), v, 4, Columbus, Ohio, April, 1892.—Insects which burrow in the stem of wheat, F. M. Webster.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, London, May, 1892.—Our Rush-feeding *Coleophoræ*,* J. H. Wood. Further notes on *Eupithecia extensaria*, G. T. Porritt. On a new *Onthophilus* from Mexico, G. Lewis. Annotated list of British Tachiniidæ (cont ), R. H. Meade. The butterflies of Rawal Pindi and the Murree Hills, Punjab (cont.), N. Manders. On new or little-known Coccidæ, chiefly English-2,* R. Newstead, 1 pl.

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SEVENTH REPORT on the injurious and other insects of the State of New York by J. A. Lintner, Ph. D., State Entomologist, Albany, 1892. Pp. 200–404, 40 figs.

BULLETIN DE LA SOCIETE VAUDOISE DES SCIENCES NATURELLES (3), xxvii, Lausanne, February, 1892.—Origin of the existing Ant fauna of Europe, C. Emery.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1891, pt. 4, April 1, 1892.—On the Micro-Lepidoptera of the West Indies, Lord Walsingham, 1 pl. On the spiders of the island of St. Vincent, E. Simon, 1 pl. Descriptions of new butterflies collected by Mr. F. J. Jackson, F. Z. S., in British East Africa during his recent expedition, II, E. M. Sharpe, 1 pl. On the association of Gamasids* with Ants, A. D. Michael, 2 pls.

TRANSACTIONS AND PROCEEDINGS AND REPORT OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xiv, 2, Adelaide, December, 1891.—Further notes on Australian Coleoptera, with descriptions of new genera and species, Rev. T. Blackburn.

## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### LEPIDOPTERA.

*Aegeria armasata* Druce, Ann. Mag. N. H. (6), ix, p. 275, *Ae. mardia* p. 275, *Melitta beckeri* p. 276, Durango, Mex. *Metosamia* (n. g. Saturniidæ), p. 276, *M. godmani*, p. 277, Oaxaca, Mex. *Telea aurelia*, *Phassus marcius*, p. 278, Durango.

Pyralidæ: *Sericoplaga* n. gen. Warren, Ann. Mag. N. H. (6), ix, p. 295. *S. externalis*, p. 296, Tex.

*Anarta besla*, Skinner and Mengel, Proc. Acad. Phila., 1892, p. 158; *Glaucopteryx immaculata*, p. 159, Greenland.

*Argynnis oweni*, Edwards, Can. Ent. xxiv, p. 105, Cal. *A. cornelia*, 106, Col.

*Teras comandrana* Fernald, Can. Ent. xxiv, p. 121, Mass., Pa., Tex. *Cacœcia magnoliana*, p. 121, N. Y. *Pyrausta magdalena*, p. 122, Tex., Fla. *Coleophora fletcherella*, p. 122, Ont., N. Y.

Four n. gen. 8 n. sp. Pterophoridæ, 4 n. gen. 31 n. sp. Tineidæ, Walsingham, Proc. Zool. Soc. Lond., 1891, pp. 492–549, West Indies.

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* Contains new species other than North American.

## DIPTERA.

*Sarcophaga helicis* Townsend, Psyche vi, p. 221, Ohio. *S. imbicis* Townsend, Can. Ent. xxiv, p. 126, S. Dak.

*Exoprosopa grata*, Coquillett, Can. Ent. xxiv, p. 124, Cal., Wash. *Geron fasciola*, p. 125; *G. capax*, p. 126, Cal.

*Camerania* n. gen. Syrphidæ, Giglio-Tos, Bull. Mus. Zool. Anat. Comp. Univ. Torino, No. 117, for *Temnocera megacephala?* Loew.

*Blepharipeza rufescens* Townsend, Trans. Am. Ent. Soc. xix, p. 90, Md. *Hystricia aldrichi*, p. 91, S. Dak. *Atropharista* n. gen. Tachinidæ, p. 92; *A. jurinoides*, p. 92, S. Dak. *Echinomyia dakotensis*, p. 94, S. Dak. *Tachinomyia* n. gen. Tachinidæ, p. 96; *T. robusta*, p. 96.

## HYMENOPTERA.

Eleven n. sp. *Halictus*, 1 n. sp. *Andrena*, 1 n. sp. *Calliopsis*, 1 n. sp. *Melissodes*, Robertson, Amer. Nat. xxvi, pp. 267–274, U. S.

*Ceropales cressoni* Fox, Trans. Am. Ent. Soc. xix, p. 58, Neb., Wash.

## HEMIPTERA.

Fourteen n. sp. *Phlepsius* Van Duzee, Trans. Am. Ent. Soc. xix, pp. 63–82, U. S.

*Dendrocoris fruticola* Bergroth, Rev. d'Ent. x, p. 228, Fla.

*Gnathodus impictus*, *abdominalis*, Van Duzee, Can. Ent. xxiv, p. 113, N. J. *Athysanus comma*, p. 114, Ia.; *A. bicolor*, p. 114, Kan., Miss.; *A. obtusus*, p. 115, Miss. *Deltocephalus flavocostatus*, p. 116, Miss.

## COLEOPTERA.

*Isonychus prasinus* Nonfried, Berl. Ent. Zeit. xxxvi, p. 223; *Ceraspis elegans*, p. 223; *C. imitatrix*, p. 224; *Epectinaspis honduræ*, p. 231; *Phyllopertha latitarsis*, p. 233; *P. sericeo-micans*, p. 233, Honduras.

*Ischalia vancouverensis* Harrington, Can. Ent. xxiv, p. 132, Vanc. Is.

*Onthophilus julii* Lewis, Ent. Mo. Mag. (2), II, p. 124, Mex.

## ARANEINA.

One hundred and fourteen n. sp., Banks, Proc. Acad. Nat. Sci. Phila., 1892, pp. 11–81, 5 pls.

*Drexelia* n. gen. for *Epeira directa* Hentz, McCook, id., p. 127.

Fourteen n. gen. 31 n. sp. Simon, Proc. Zool. Soc. Lond. 1891, pp. 549–575, St. Vincent.

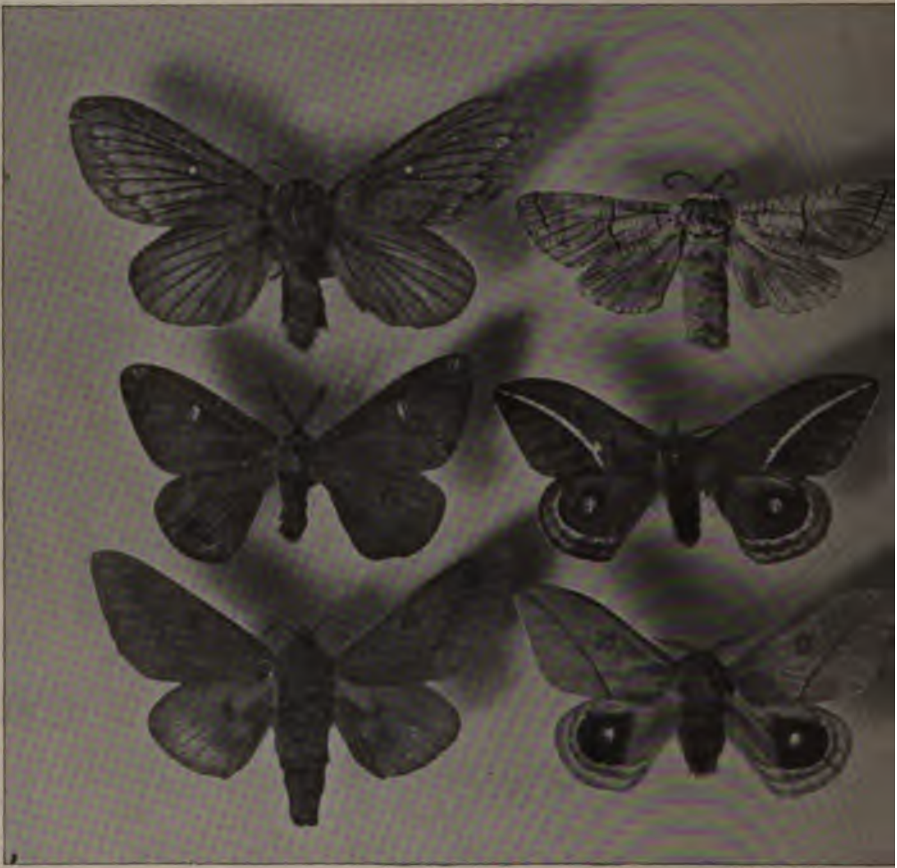
# Doings of Societies.

A MEETING OF THE ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA was held April 28th Meeting called to order at 8.20 P. M. In the absence of the director Mr. James Ridings was called to preside. Members present: Ridings, G. B. Cresson, Liebeck, Skinner, Laurent. Associates: Calvert, Fox, Dr. Castle. Mr. Henry Bird, of Rye, N. Y., presented two specimens of *Gortyna inquæsita*. Four specimens of Hymenoptera were presented by Mrs. Annie Trumbull Slosson, including an undescribed species from Florida. Mr. Calvert presented a paper for publication in the "Transactions" of the American Entomological Society, which refers to material (Odonata) collected by the U. S. Eclipse Expedition to the Congo and by Dr. W. L. Abbott at Zanzibar and in the Kalimanjaro region. Inasmuch as the paper, in its entirety presented to the U. S. National Museum for publication, would be long in coming out he had, by permission from Dr. Riley, presented an abstract to night. Mr. Calvert reviewed the contents of the paper and made drawings on the black-board to illustrate points in the neuration of the old world genus *Orthetrum*. The characters of some of the species were dwelt on at length. Mr. Calvert also exhibited a specimen of *Pantala hymenæa* Say, which had been obtained from Mr. C. W. Johnson, to whom it had been presented by Mr. H. D. Coyle, a park guard, who had captured it in Fairmount Park.

HENRY SKINNER, *Recorder*.

ENTOMOLOGICAL SOCIETY OF WASHINGTON.—The seventy-ninth regular meeting was held March 3, 1892, at the residence of Mr. E. A. Schwarz. Mr. Wm. Ross Harris, of Texas, was elected a corresponding member of the Society. Dr. Stiles gave a talk on the "Histology of Ticks." He made some blackboard sketches and exhibited a number of slides illustrating the subject. He dwelt especially on the cuticular tissue, alimentary canal, stigma, excretory organs and glands of the head. Discussed by Dr. Marx. Dr. Theo. Gill presented a paper on "The Larva of Insects as an intercalated Stage." He quoted and criticised certain statements in Agassiz, "Class. of Animals from Embry. Data." From these criticisms he argued to show that the larva of insects was an added or intercalated stage. He had prepared a table giving the distribution of fossil insects. This showed that the Orthopteroid, Neuropteroid, Hemipteroid and Coleopteroid insects were not only the insects of the Palæozoic, but also the prevailing insect types of the Mesozoic age. The Diptera, Lepidoptera and Hymenoptera, which have a larva or caterpillar stage, were later developments. Discussed by Messrs. Ashmead, Banks and Gill. NATHAN BANKS, *Recording Secretary*.

ENTOMOLOGICAL NEWS for May, was mailed May 2, 1892.



Gloveria arizonensis Pack.
Calosaturnia mendocino Behr.
Citheronia sepulcralis G. & R.

Cossus brucei French.
Hyperchiria zephyria Grt.
Hyperchiria pamina Neum.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. SEPTEMBER, 1892. No. 7.

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**OUR** picture this month represents some rare moths generously loaned for illustration from the fine collection of I. C. Martindale, Esq. The negative was kindly made for the NEWS by Dr. W. D. Robinson, of Philadelphia. *Gloveria arizonensis* is a gray moth, and its name indicates its home. *Calosaturnia mendocino* is from California; the primaries are dark smoky-brown, and the inferiors tawny, with a black band as shown in figure. *Citheronia sepulcralis* is found from Pennsylvania southward; the primaries are dove color, and the secondaries are same color, but lighter, and the markings are wine color. *Cossus brucei*, from Colorado, is white with black lines. *Hyperchiria zephyria* is from New Mexico, and was discovered by Prof. F. H. Snow. The white line across the primaries is quite characteristic. *Hyperchiria pamina* is readily distinguished by its pale color; it is a very pretty species. The NEWS hopes to publish figures of moths, as there is such a demand for figures in the Heterocera. As the methods improve we will descend in the scale and study the smaller species. The figures on plate are somewhat smaller than the normal size of the insects.—ED.

# Some Deformities in the Abdominal Segments of Tachinidæ.

By C. H. Tyler Townsend.

In the examination of material in the Tachinidæ, I have run across several cases of deformity in the abdominal segments, which are worthy of being placed on record as a contribution to the subject. Four specimens, belonging to as many different species and genera, are noticed below.

*Echinomyia thomsoni* Will.—A ♀, taken June 8th, Las Cruces, N. M., exhibits the following peculiarities: The first segment is normal; the right half of the second segment is quite normal, but the left half is very considerably lengthened and joins the fourth segment for nearly one-third of its width, crowding out the third segment entirely on that side; the third segment is represented by about two-thirds of that segment on the right side above, and about one-half of the segment below; the fourth or anal segment is but slightly lengthened on its left one-third. Thus the abdomen appears drawn up on the left side, the anal segment being set on to the second, on the left, at an acute angle to supply the deficiency in the third segment. None of the macrochætæ belonging to the third segment are present at the suture between the second and fourth segments, and this suture is abnormally deep and wide, and presents the appearance of a scar.

*Hyphantrophaga hyphantriæ* Twns.—A ♀, bred from *Hyphantria cunea*, issued August 25th, Las Cruces, N. M., presents a more peculiar deformity. In this specimen the abdomen is drawn up on the right side; the first segment is somewhat lengthened and bulging behind on the right side, making the suture between the first and second segments sinuate; the second and third segments are separated by a suture on the left side extending hardly to the median line, while on the right they are merged into a single long segment about two-thirds the normal length of the two; the anal segment is quite normal in its proportions, but points a little to the right in consequence of that side of the abdomen being shortened. The normal hind marginal macrochætæ of the second and third segments are wholly wanting on the right side. The ventral portion presents the same appearance.

*Clytia flava* Twns.—A ♂, from S. Illinois (Robertson), exhibits a still more marked deformity. The second segment seems to be split diagonally by an abnormal suture running from the left anterior corner to the right posterior one; a blind suture on the right side occupies nearly the place of the normal one between the first and second segments, while a similar suture on the left side occupies the position of the normal one between the second and third segments; these two sutures reach only to the median line and there disappear; the anal segment is quite normal in form, but is somewhat inclined toward the right, as the posterior margin of what should normally constitute the third segment is a little oblique to the median line and is inclined anteriorly on the right. There is no special abnormal feature in the disposition of the macrochætæ, except that the normal median marginal pair of the second segment is obsolete and that of the first segment nearly so. The ventral portion does not share the deformity to such a degree as the dorsal. This specimen shows an inclination toward either an absorption of one abdominal segment, or the acquisition of a fifth one.

*Eustomatodexia insulensis* Twns. ms.—A ♂, from Jamaica (C. W. Johnson), May, shows the following peculiarities: The first segment is lengthened by one-fourth on the right half, where it joins the right side of the third segment, its posterior suture being sinuate; only the left half of the second segment is present, extending to and including the median line, its anterior and posterior sutures uniting in a curve on the median line; the right side of the third segment is lengthened by one-third, which still leaves the right side of the abdomen somewhat shortened or drawn up, on account of the absence of the second segment on that side; the fourth or anal segment is normal. The venter agrees with the dorsum; the macrochætæ on hind margins of last two segments are normal; the normal lateral marginal one on each side of first segment is present; the lateral marginal pair of the second segment is present only on the left side, while the normal median marginal pair is represented by a single macrochæta.

The last mentioned individual is a *dexiid.* In all of these species the normal number of abdominal segments is four. I have referred to the antero-posterior diameter of the segments as the length, although it is the lesser diameter.

In all probability the deformities above described were due to injuries received in the larval, not in the pupal state.

## A new GLUPHISIA from the Pacific coast.

By HARRISON G. DYAR.

**Gluphisia quinquelinea** n. sp. ♂.—Head and thorax dark gray without marks. Abdomen and legs paler gray; fore wings even gray, not quite as dark as thorax, black and whitish scales and hairs mixed, not anywhere distinctly irrorate. A space at the base between median and internal veins, for a short distance on both sides of the basal line, as well as the lower half of median space is shaded with an obscure flesh-colored tint. Basal line black, starting on costa 2 mm. from base, strongly inwardly dentate on subcostal, thence proceeding straight towards internal margin, slightly widened and marked with a few bluish metallic scales on submedian fold, but ending at internal vein; transverse anterior line black, rather broad, nearly straight from costa to internal margin, arcuated inwards a little across internal vein; median line blackish, rather obscure, parallel with t. a. line slightly undulate and diffuse centrally; transverse posterior line black, nearly straight from costa to internal margin, slightly undulate and inwardly produced on submedian fold. It is slightly oblique to the median line, starting from the costa at 2 mm. distance from it, and nearly joining it at internal margin. The t. a. median and t. p. lines are each marked with a few bluish metallic scales in the submedian interspace; subterminal line black, broken by the gray veins, outwardly arcuate from costa to vein 5 and again from vein 5 to vein 2, then straight to anal angle; fringe gray, faintly spotted with blackish. Secondaries pale gray, whitish at base, shading into blackish at anal angle. Below uniform whitish gray, darker on the costa of fore wings. Expanse 31 mm.

Described from one male, Portland, Oreg. A table to separate the American species of *Gluphisia* will appear later in "Psyche."

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## A Local List of the Genus CATOCALA.

By GEO. A. EHRMAN, Pittsburg, Pa.

The genus *Catocala* is well represented in western Pennsylvania as the following list will show. I have taken all the species and varieties quoted, during the last twelve years of my entomological labors. Prof. John B. Smith has listed seventy-eight species apart from the varieties that are found in Boreal America. Of his list I have taken thirty-two species in Allegheny County, Pa., not mentioning numberless variations.

### CATOCALA.

*nubilis* Hbn., common; *gracilis* Edw., rare; *minuta* Edw., rare; *grynea* Cram., rare; *cerogama* Gn., rare; *ultronia* Hbn., rare;

*coccinata* Grt., rare; *ilia* Cram., common; *parta* Gn., common; *unijuga* Walk., rare; *briseis* Edw., rare; *concumbens* Walk., rare; *cara* Gn., common; *amatrix* Hbn., rare; *tristis* Edw., rare; *epione* Dru., common; *antinympha* Hbn., rare; *serena* Edw., common; *habilis* Grt., common; *innubens* Gn., common; v. C, *scintillans* G. & R., rare; *paleogama* Gn., common; v. A, *phalanga* Grt., rare; *neogama* S. & A., common; *subnata* Grt., common; *piatrix* Grt., rare; *nebulosa* Edw., rare; *judith* Strk., rare; *robinsonii* Grt., rare; *retecta* Grt., rare; v. A, *flebilis* Grt., rare; *vidua* S. & A., rare; *lacrymosa* Gn., rare; v. D, *paulina* H. Edw., rare; *insolabilis* Gn., rare; *obscura* Strk., common; v. A, *residua* Grt., rare.

I have followed in the footsteps of Prof. John B. Smith for my classification of this list, and no matter how much I dislike the system of his Rhopalocera, I find his system for the Heterocera is the best that we ever have had for the American student up to the present time.

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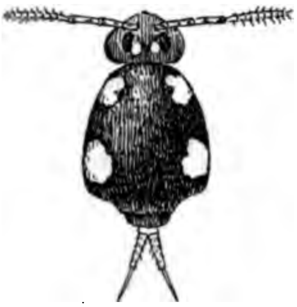
## A NEW SMYNTHURUS.

By F. L. Harvey, Orono, Me.

**Smynthurus 6-maculata** n. sp.—Deep blue-black, with four conspicuous enamel-white spots on the body and two smaller ones between the eyes, located as shown in the cut. The posterior pair of spots on the body largest, both pairs on the body somewhat reniform in outline with the sinuses on the dorsal side. Antennæ and legs paler, shaded with purple. Eye patches conspicuous and darker than the coloring of the head. Head broader than long, nearly in the ratio of 3:2. Body broad behind, where the breadth about equals the length, abruptly narrowing from the broadest part to the last segments. Antennæ slender, nearly two-thirds the length of the body and head. The joints in the ratio of 2:3:4:8, and elbowed between the third and fourth. The terminal segment composed of about nine subjoints. Elater long, slender, the branches of the fork widely spreading, second and third joints equal, the terminal segment conical, slender and ending in a point. Legs rather long and stout; claws large.



*Measurements.*—Total length .7—1 mm. Parts of a full grown specimen about as follows: head .2 mm. long, .3 mm. broad; antennæ, 6 mm.; ratio of segments 2:3:4-8; body .8 x .8 mm.; spring .45 mm.; second and third segments each .16 mm.; largest white spot on body about .18 mm., or nearly one-fifth the body and head.

*Hab.*—Orono, Me., July, August and September, 1891, F. L. Harvey. Under bark on stumps and on herbage in the woods. Several specimens examined. One specimen was taken July 7, 1891, with *Papirus marmoratus* Pack. under the loose bark of a fir tree stump. During July, August and September, they were occasionally seen upon grass and other plants in the woods. The accompanying cut was drawn for the writer from live specimens by Mr. J. H. Emerton, Boston. It shows the insect magnified about thirty times and a little too broad, due to compression necessary to hold it still while drawing.

This species is apparently related to *S. quadrimaculata* Ryder (Proc. Acad. Nat. Sci. Phila., 1878, p. 335), but differs in the larger size, broader body, purplish color and white spots between the eyes. The dark blue-black color of the body, cleared by balsam, appears decidedly purple, while the antennæ and legs are pale purple naturally. This form is rather sluggish, but jumps well when disturbed. A beautiful species, not easily detected because of its small size and dark color.

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## Description of four new species of Fossorial Hymenoptera from California.

By WILLIAM J. FOX, Phila., Pa.

**Sphex (Priononyx) ferrugineus** n. sp. ♀.—Ferruginous; tips of mandibles, ocellar region, antennæ, except joints one, two and basal half of third and two longitudinal marks on metanotum black; front, face, clypeus and the thorax densely covered with bright silvery pubescence. Wings hyaline, nervures brownish; clypeus strongly convex, its anterior margin rounded, entire; inner eye margins distinctly converging towards the clypeus; frontal furrow strong, beginning from a depression before the anterior ocellus; scape of antennæ long, but much shorter than first joint of flagellum, this latter a little longer than the two following ones united, these joints in length about equal; prothorax above very broad and convex, not impressed; dorsulum with two parallel, raised, smooth, broad ridges, which extend from base almost to apex; scutellum strongly and widely furrowed medially, having the appearance of being bituberculate; metanotum obliquely striated, the striæ are only seen where the metanotum is black, being covered by the silvery pubescence elsewhere; first recurrent nervure received by the first submarginal cell a little before the apex, the second recurrent nervure interstitial; third submarginal cell much narrowed at the top; petiole nearly as long as joints 1 and 2 of hind tarsi and slightly curved; all the tibiæ and tarsi spinose, the anterior tarsi ciliated with abundant, fine, whitish bristles on the outer side, the inner side of first joint with several stronger, but shorter bristles, the femora and tibiæ sparsely clothed with long, pale hairs; longer spur of hind tibiæ within on the apical half with several blunt spines, the basal half with close-set bristles. Length 19 mm.

Described from one specimen, Los Angeles, Cal. (D. W. Coquillett). The U. S. National Museum collection contains six other specimens of this species.

**Pseudagenia Blaisdelli** n. sp. ♀.—Ferruginous; ocellar region black; clypeus convex, the anterior margin slightly incurved; frontal furrow distinct, though not strong; space between eyes at top and beneath about equal, if anything wider at the bottom; first joint of flagellum less than one-third longer than the second, this latter about one-fifth longer than the third; inner eye margins strongly incurved; ocelli rather small; posterior margin of prothorax slightly angular, scutellum with a feeble, longitudinal, raised line, medially; metathorax rounded behind. Wings subfuscous, the apical margins darker, first recurrent nervure received by the second submarginal cell at the middle, the second recurrent nervure is received by the third submarginal cell a little beyond the middle; third submarginal cell narrowed nearly one-half at the top; the medial and posterior tibiæ very feebly spinose; posterior tarsi very long, the first two joints united being as long, or a little longer than the hind tibiæ; longer spur of hind tibiæ about one-third as long as the first joint of hind tarsi; the claws armed with a strong basal tooth. Abdomen with a sparse, sericeous pile. Length 9—10 mm.

San Diego, Cal., Aug. 23, 1891, sent me by Dr. F. E. Blaisdell, of Coranado, to whom I take pleasure in dedicating this pretty species. There are other examples in the collections of the Amer. Ent. Soc. and the U. S. Nat. Museum. It is related to *Pseud. melanocephala* Cam. from Mexico.

**Planiceps planatus** n. sp. ♀.—Black with bluish and purplish reflections; clypeus planate, shining, with a few scattered punctures, its anterior margin truncate medially, the sides rounded; behind the antennæ there is a short, longitudinal, dimple-like impression; antennæ situated in two strong excavations; the clypeus produced back between these excavations; scape shining, the remainder of the antennæ opaque, first joint of flagellum about one-fifth longer than the second, narrowed to the base; when viewed from the front the occiput is depressed medially; mandibles reddish, posterior margin of prothorax subarcuate, nearly transverse; metathorax with a slight trace of an impressed line on upper surface, the posterior face with strong, transverse folds, which become obsolete medially; suture between meso- and metapleuræ marked by small foveæ; last dorsal and ventral segments with long, black hairs. Legs black, the tibiæ and tarsi more or less armed with distinct spines; the anterior tibiæ and tarsi clothed with a sericeous pile; tarsal claws armed with a large, acute tooth at base. Wings very dark, with a slight violaceous reflection, apical margins darker. Length 14 mm.

Two specimens; San Diego, Cal. (Blaisdell) Related to *P. lævifrons* Cr. and *P. vicinus* Cr. The fact of this species having three submarginal cells would place it in *Parapompilus* Cress. (non Smith), which is but a section of *Planiceps*. *Parapompilus* Sm. has the wings much abbreviated.

**Sphærophthalma anthracina** n. sp. ♂.—Entirely black, densely clothed with long, black pubescence. Head strongly punctured; scape clothed with black pubescence; thorax strongly punctured, the metathorax with very large punctures or pits, with the pubescence sparser. Wings strongly fuscous, with three submarginal cells, the third of which has the outer nervure angulate. Abdomen strongly punctured; first abdominal segment sessile with the second. Length 9 mm.

Two specimens; San Diego, Cal. (Blaisdell) This is our only species that is entirely black.

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## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

The Agaristidæ, as they are represented in our fauna are rather unsatisfactorily defined, and the position of *Eudryas* and allies is not settled. Good authorities have referred these forms to the Bombyces or Noctuidæ, and the characters allying *Eudryas* to *Alypia* are in the larva rather than the imago state. Species of *Alypia* are found in all parts of our country and the family characters are drawn from this genus. The antennæ are slender, thickened beyond the middle and then gradually drawn out to a point. The body is moderate in size, the head rather small, with a pointed front; ocelli present, palpi distinct. The primaries are 12-veined, the internal (v. 1) simple, not forked at base, 3, 4 and 5 rather close together from the end of the median; 6 to 10 surrounding or out of an accessory cell at the tip of the subcostal. This is almost exactly as in the Noctuidæ save that the internal vein in the latter family is forked at base. The secondaries have eight veins, the two internal veins counting as one, vein 5 is almost midway between 4 and 6, and the costal is out of the subcostal a short distance from the base. The venation of the secondaries is Bombycid rather than Noctuid in character. The antennal structure is the best and most obvious character. The species strictly belonging to this family are usually black in color with white or yellow spots or blotches and often irrorate with blue scales. They fly by day as a rule, and our common eastern species is, as a larva, quite destructive to grape.

The Syntomidæ are poorly represented in our fauna, but are rich in genera and species in the tropics of both hemispheres. They are rather small insects with filiform antennæ, ocelli sometimes absent, but more usually present, body usually stout, primaries large and secondaries usually proportionately small. The secondaries have only one internal vein and lack the costal vein altogether. There are never more than seven veins all told and sometimes only four. The primaries have one internal vein; veins 2 to 5 are quite widely separated, veins 7 to 10 from one stalk and crowded together close to the apex. Most of the genera are found only in the southern part of our country, but *Lycomorpha*, which is an aberrant member of the family, extends into Canada. Our common species is *L. pholus*, and has the wings yellow at base and black toward the tip. Though this species belongs, structurally, to the Syntomidæ, it gives but a very feeble idea of the beautiful forms that are allied to it in more congenial climes. Often the wings are transparent or nearly so, and bright, even striking colors abound. Odd and interesting structural modifications are common, and one of these I have described in volume 1 of "Entomologica Americana," where will be found a complete study of *Cosmosoma omphale*.

The Pyromorphidæ are moderate or small-sized insects, often with thinly scaled semi-transparent wings, slender body and filiform antennæ, which in the male are often lengthily pectinated. The head is small but distinct, and the ocelli are large and prominent. The venation is distinctive. On the primaries there are two inner or free veins, and on the secondaries there are three such veins. The costal vein of the secondaries is wanting, making a combination not paralleled in any other family. The species are rare as a rule, and are mostly southern or southwestern, a few only extending to the New England States. *Harrisina americana* is the most common and best known species, and differs from the typical genus in the much narrower wings. Black colors with reddish or yellowish shades basally and on the collar predominate in this family.

The Ctenuchidæ contain species of larger size making a very distinct step toward the Lithosiidæ. In external appearance and habitus they are very like the Pyromorphidæ, *Scepsis* having almost precisely the form of *Harrisina*, and in this family the male antennæ are also lengthily pectinated. But the venation is entirely different, the primaries having only one, the secondaries only two internal of free veins. The secondaries yet lack the costal vein. The species of this family are represented in all parts of our territory and some of them are locally common. *Ctenucha virginica* and *Scepsis fulvicollis* are of our best known eastern species.

All the families mentioned in this paper were formerly included under the term Zygænidæ. A more detailed statement of characters, with figures illustrating the same, can be found in the Trans. Am. Ent. Soc. xii, p. 77.

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## A NEW SPECIES OF PAMPHILA.

By Henry Skinner, M. D.

*Pamphila errans* n. sp. ♂.—Expands 1¼ inches (being the distance from the middle of thorax to tip of one wing, doubled); female a little more; upperside dark brown; superiors have two small yellowish spots on the costal nervures about one-third the distance from tip to thorax, and an interrupted row of four spots of the same color on an imaginary line running from the tip to near the middle of the interior margin; the uppermost of these is a mere dot, and is situated at end of discoidal, just below the point of cell. The second is wedge shaped with the point of wedge inward, and is at the junction of two nervures running into a point at the discoidal cell. The third spot is nearly quadrate and larger than the other two. The fourth is resting on the submedian nervure and is nearly a rectangle. The fringes are yellowish white, darker towards the tips. Inferiors are immaculate, with the inner two-thirds covered by long hairs of a lighter shade;

underside is considerably lighter in color, and the neuration is yellowish and quite distinct. The spots on the superiors are the counterpart of those above, except that there are two small spots instead of the first one of the row above. The inferiors have three spots of same color, the first in the third subcostal space; the second in the fourth subcostal space, and the third in the first median interspace. Fringes of superiors dark, and of inferiors same as above. Body and antennæ above dark brown; below body, palpi and antennæ yellowish, with a dark stripe down the centre of the abdomen.

The species above is almost the exact counterpart of *ocola* Edw. but smaller, and below is very close to *panoquin* and *panoquinoides*. I have specimens from California received from Mr. H. G. Dyar and Dr. Blaisdell, and also specimens from Texas.

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## PREPARATORY STAGES OF PAMPHILA ERRANS Skinner.

By Harrison G. Dyar.

*Egg.*—Elliptic-oval, flattened at base, a round, slightly depressed spot on vertex. Smooth, slightly shiny, sordid white, more distinctly white on top and in several obscure vertical streaks on the sides; under the microscope covered with little regular raised reticulations, becoming less distinct at the micropyle. Diameter .8 mm. Laid singly on the upperside near the base of a blade of the food-plant.

*First larval stage.*—Head rounded triangular, nearly pointed at vertex, which surpasses the body, lobes not separate; smooth, dark brown, blackish in front; a small, indistinct, whitish line above the mouth; width .45 mm. Body at first small, entirely pale yellow; later long, cylindrical, of uniform size; feet normal, but short; segmental incisures shallow, color uniform pale yellowish green, with double dorsal and single subdorsal, narrow, even yellowish lines. Anal plate large, circular, projecting and bearing a few pale hairs. The little larva rests on the upperside of a blade in the fold near its base, feeding entirely or mainly during the night.

*Second stage.*—Head rounded triangular, very slightly notched on vertex, somewhat shiny, minutely punctured and furnished with scattered pile; pale whitish with a yellow tinge, a broad brown band from above base of antennæ to vertex, joining the one from the other side below the apex of the head and another similar fainter band behind and parallel to this passing behind the vertex; mouth brown, width .7 mm. Body light green, not shiny, transversely annulated, the two dorsal and subdorsal lines distinct, narrow, pale yellow, with even edges; they run the whole length of the body, and the subdorsal line is slightly wider than the dorsal one. Anal plate rounded, projecting with some pale hairs.

*Third stage.*—Head rounded triangular, bulging in front and at the sides, clypeus not depressed, pale green, with many minute blackish dots, the brown bands as before, but much less distinct; labrum whitish, jaws and ocelli black; surface minutely pilose, width 1.1 mm. Body much as before, but more of the color of grass, covered with very minute, dark green dots; the pale yellow lines are as before, rather more distinct with their edges defined by a darker green line; they begin on the anterior edge of joint 2, but the dorsal one terminates at the beginning of the anal plate. There is a substigmatal ridge, above which is a band slightly darker green than the ground color, and below it a broad, distinctly greenish yellow band, which becomes more distinct as the stage advances.

*Fourth stage.*—Head as before, but the brown bands entirely absent; grass-green, minutely wrinkled and covered with very small brown dots; jaws and ocelli black, labrum white; width 1.6 mm. Body grass-green, with the four narrow yellow lines bordered obscurely with dark green, the space between them and down the sides as far as the lateral region thickly dotted with dark brown; along the subventral ridge is a broad greenish yellow band, shading off above into the ground color.

*Fifth stage.*—Head rounded triangular, bulging; clypeus small, grass-green, minutely dotted with black; labrum whitish, jaws black, ocelli black, ringed with white, five in number, the lower one remote from the others; width 2.4 mm. Body shaped as before, the anal plate very large (1.5 mm. long), projecting half its length beyond the last pair of abdominal feet, ridged by the subdorsal line, but concolorous with the body. Feet short, grass-green, tinged with yellow, the lines as before, namely, a double dorsal and single subdorsal line, narrow and rather obscure, yellowish, edged with green; the body is densely dotted with green, darker than the ground color, and there is a darker superstigmatal shade. Substigmatal band along the ridge pale yellow, distinct, dotted with green; spiracles small, and situated on the upperside of the stigmatal ridge, the spiracles on joints 2 and 12 being larger than the others, the one on joint 12 situated above the ridge.

*Chrysalis.*—Fastened by cremaster and a loop of silk to a stem or blade of grass, on which a mat of silk had been previously spun. Cylindrical, slightly flat ventrally, long and slender. Abdomen tapering, thickest at thorax; a tapering process like a horn projecting from the head in front; wing cases not projecting, the leg cases extending a little further along the abdomen than the wing cases; eyes prominent; cremaster broad, flat, excavated below and ridged subdorsally, much resembling the anal plate of the larva; width 3.5 mm.; length 19 mm.; length of "horn" 1.5 mm. The color of the living chrysalis was not ascertained, but is presumably green.

*Food-plant.*—Grass growing near the sea (species not determined). Another larva had its head 1.9 mm. wide in the fifth stage and died while preparing for another moult. It would thus have had six stages if it had lived. Larvæ from Santa Barbara County, Cal., on the grass very near the sea, where they were in reach of the salt spray; none found outside this region.

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## Note on Trichobius dugesii Twns.

By C. H. T. Townsend.

It will perhaps be remembered by some that an article in the last volume of Entomological News (vol. ii, pp. 105–6) on a new hippoboscid from Mexico, which I described as *Trichobius* n. gen. *dugesii* n. sp., adopting the generic name *Trichobius*, which was apparently long ago proposed by Gervais, but of which no description, or reference to such, could be found.

Quite recently Dr. Alfredo Duges, who originally sent me the hippoboscid, very kindly communicated to me the following information which will throw much light on the original use of this generic term, and for which I am under many obligations to him.

Dr. Duges, who had labeled the specimen "*Trichobius* sp.," had searched in vain at different times during the last year for the description, or figure, which had led him to label it thus. Finally, while looking by chance in the "Atlas de Zoologie on collection de 100 planches . . . par M. Paul Gervais, Paris, 1844," he found a figure labeled "*Trichobie parasite*," and also the following reference in the text: "Trichobius parasiticus Gerv., de la Guiane. Petit insecte diptere de la famille des Mallophages de Nitzsch, trouve parasite sur une chauve-souris de la Guiane appelée Desmodus rufus. Il n'a pas encore été décrit."

Therefore, to Dr. Duges is due the credit for at last finding the source of this name. He says, in conclusion: "L'insecte ressemble beaucoup a celui que je vous ai envoye, et que vous avez décrit le premier."

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THEY HAVE SLAVES WHO ATTEND TO ALL THEIR WANTS.—Certain warlike species of ants, as *Formica sanguinea* and *F. rufescens*, have subjugated a negro species, *F. fusca*. Here again ants, while behaving like men, have never allowed themselves the abuses of force to which men are accustomed. They never enslave adult ants; they seize upon the pupæ, bring up the young, treat them gently, and thus turn them into docile and zealous servants. The slave ants who have never known the city from which they sprang, do all the inferior work of the community with eager alacrity, care for the larvæ, carry their mistresses, feed them, barricade the approaches in case of siege, receive the victorious amazons with joy when they return from a fruitful expedition, and relieve them of the pupæ captured in the raid. They are so thoroughly on the side of their employers that it is believed they molest those who return from an expedition with empty mandibles. As for these slaves their labor is purely domestic. In some English ant hills the slaves never leave the nest. In Switzerland some go aphis hunting, a business scorned by the warrior ants. The warriors always seem to consider the black ants who serve them as their property, and though they may allow themselves to be carried by their slaves, these soldiers, in their turn, do not disdain to carry their servants for safety's sake when changing house, or in case of a siege, to drag them hastily down into the depths of the subterranean dwelling. This system of slavery has certainly lasted for many centuries in the ant world, but it has not existed always, as is attested by certain survivals, because in certain species, that pampered progenetrix, the queen, participates in the labors of the community exactly like a humble worker.

Prof. J. B. SMITH, New Brunswick, N. J., is engaged on a monographic revision of the Deltoid group of the Noctuidæ, and desires material from all parts of the country. He will name and return all material sent him for the privilege of retaining such specimens as may be needed for description or for completing the collection of the U. S. National Museum.

# ENTOMOLOGICAL NEWS.

Published monthly (except July and August), by the Entomological Section of the Academy of Natural Sciences, of Philadelphia, with the endorsement of the American Entomological Society. It will contain not less than 240 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., SEPTEMBER, 1892.

THE editor of this journal is an entomologist,—is thoroughly conversant with all the orders of insects, and is familiar with every genus and species, and can read proof and correct all the spelling in all orders without ever referring to a list. The printer can read any writing intuitively, and it makes no difference how bad it is, he always understands all the scientific terms. When A and O are made alike he can tell them apart, and also N and U. The editor is also familiar with all botanical, geological and geographical names, and need never look them up, and if sometimes he does, it is only necessary to leave his other work and walk to the library of the Academy and consult any special work he wishes. This only takes a few hours' time, and, as he has nothing else to do, it makes little difference. Then again, he is well paid for this, as out of his salary, as editor, he can save a few thousands a year. If a genus is mentioned which has been described in the "Entomologiske Meddelelser Udgione af Entomologisk Forening," of course our printer, who lives on the leaves of the "Encyclopedia Brittanica," reads it correctly, especially when the author of the paper writes it in Chinese (apparently), and the editor does not even look it up, being perfectly familiar with all known languages. If there are any mistakes in the journal due to the beautiful MS. writing of scientific names, even if they be new genera and species, the editor is to blame as he, knowing everything, should read it at sight. The editor is responsible for everything appearing in the journal, being thoroughly familiar with Thysanura, Dermaptera; Platyptera, Plectoptera, Thysanoptera, Mecoptera, Trichoptera, Siphonaptera, Aphaniptera, Strepsiptera, Rynchota, Corrodentia, Euplexoptera. If an individual writes or spells badly, or makes a mistake, he is in no sense responsible, as the editor can correct it without any trouble whatever.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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Mr. W. F. KIRBY, in an article in the August number of the "Entomologist" entitled, "On the Identification of *Attacus atlas* Linn. and its allies, with remarks on some other species of the genus" says "*Attacus splendidus* Beauv. from St. Domingo may prove to be distinct (from *erycina* Shaw), when we receive a series from that island; its alleged occurrence in Texas is certainly an error."

EARLY CAPTURE OF *C. insolabilis*.—While running over lists giving dates of capture of Catocalæ, I find none earlier than July 1st for the latitude of central Ohio. June 22, 1892, I took the above-named *Catocala* resting on *Robinia pseudacacia* on the State University campus. This species is comparatively rare in this vicinity, Columbus, O., June 27th.—W. E. KELLICOTT.

**Lophopteryx elegans.**—In ENT. NEWS for April, page 87, Dr. McKnight records the capture of this moth in Franklin County, N. Y., and, in a foot-note, notes the difference between his specimen and the description of *N. notaria* Hy. Edw., from Colorado. In his original description of the species Dr. Strecker says, under var. *grisea*, "The color of the head and primaries slate-gray instead of brownish." which would correspond with the description of *N. notaria*. Hence the synonymy of this species should be :

**Lophopteryx elegans** Strecker.
1884.—Streck., Proc. Acad. Nat. Sci. Phil. p. 285.
1891.—Smith, List Lep. No. 1273.
var. **grisea** Strecker.
1884.—Streck., Proc. Acad. Nat. Sci. Phil. p. 286.
*notaria* Edwards.
1885.—Hy. Edw., Ent. Amer. vol. i, p. 17.
1891.—Smith, List Lep. *pr. syn.*

HARRISON G. DYAR.

**Bombus fervidus** Fabr.—The males referred to this species by Cresson really belong to *B. borealis* Kby. Mr. Robertson suggests *A. elatus* Fabr. as a more nearly related male, Ent. News i, 41. *B. perplexus* and *B. hudsonicus*. of which the females are unknown, may belong to *fervidus;* they belong to the section containing *B. vagans* Sm.—W. H. Patton.

A fatal Mosquito Bite (Bacillus of Anthrax communicated to a man by the insect).—New York, August 4th. A man has just died in Bellevue Hospital, according to the doctors, as a result of a mosquito bite. While the case is a very unusual one, it is not unprecedented, they say. The mosquito had absorbed the microbes of a dangerous disease, which he transmitted to the patient in the biting process. A fatal case of meningitis was developed as a result. The bacillus of Anthrax is the scientific name of the poisonous germ in this instance. The patient was Peter Kennedy, sixty-nine years old. It was about ten days ago when he was bitten on the left cheek by the mosquito. "The case is a very interesting one," said Dr. DeLaney, senior surgeon at Bellevue, to-day; "but it is not an isolated case of death resulting from the bite of a mosquito. Such cases are rare, but there are several clearly defined ones. "Anthrax is a disease of cattle. When we know that mosquitoes feed on dead horses there is nothing remarkable in their absorbing the disease germs of bacillus of Anthrax, which are germinated in the putrifying flesh. After the mosquito has absorbed the bacilli or poisonous ptomaines, it is not remarkable for them to be transmitted to the human system. The germs multiply rapidly and soon extend to nearly all parts of the body."—*Public Ledger*.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

## NOTES ON ECONOMIC ENTOMOLOGY.

Prof. Lawrence Bruner, in his report upon Insect Depredations in Nebraska for 1891, gives the following interesting account of a remedy for the cabbage butterfly (*Pieris rapæ*): "These insects were not especially numerous over the State during the year, but are referred to here simply because I wish to call attention to a reported 'new' remedy against them." To say the least, it is unique as well as simple, if it proves as effectual as is claimed for it. This remedy was brought to my notice about two weeks ago while at West Point, my old home, on business connected with my work for the Division of Entomology. The remedy is simply this: The cabbage plants are sprinkled with ordinary corn-meal while they are wet with dew or immediately after a rain, so that the meal will cling to the leaves at all points. My informant certainly had nice cabbages that were free from worms, and all he had done in the way of a preventive or remedy was to use this corn-meal as above directed or explained. He claimed that in a few days after sprinkling on the meal all the worms would be found dead and turned black, clinging to the leaves of the plants. Several cabbages that had purposely been left untreated were rather full of the caterpillars of different sizes. In order to test the corn-meal remedy for myself I treated these. On the 10th of October I received the cabbages thus treated by express, just as they were when cut from the roots. The accompanying letter reads as follows: "The worms seem to become torpid at first, at least inactive, and then seem to dry up. How the meal acts on the worms I cannot say. Cannot say whether they eat it by itself or whether it gets mixed up with the leaves they eat, or whether the meal that gets on them by adhering to them, acts like a poison on them. The meal does not seem to do any good unless there is a heavy dew on the cabbages, and it will adhere well. Perhaps they get killed by the meal getting on them while the dew is on them. But I think not." When the cabbages were received by me the worms were dead and partly dried up, just as they had been described to me. I do not know what to think of the matter, and give the facts as they appear here.

POTASSIUM IODIDE FOR BEE STINGS.—I have never seen this salt mentioned as a sting-cure, but having heard of its use by a bee keeper of forty years standing, whose verdict was "relief and cure instantaneous," I tried it. I have only used it in three cases, in all of which it was successful. A juvenile cousin aged seven, was stung on the hand,.and the cure was so effective that the sting only "tickled" next day, as he expressed it, though he looked as if the tickling was too much for him at the time. ,In my own case the relief was instantaneous, and no swelling ensued the first time, when the remedy was applied at once, and very little the second time, when applied about five minutes after. The method of application is simply to hold a crystal of the iodide to the wound.—H. E. W. in the "British Bee Journal," June 23, 1892.

SOAPSUDS FOR CABBAGE LICE.—"Some time ago we undertook a line of experiments against them, using kerosene emulsion of different strengths. The result was that a weak emulsion had little or no effect, while a stronger one thoroughly applied killed the lice, but at the same time ruined the cabbage by giving it a flavor of kerosene which remained when it was brought on the table. After some further study a trial was made of strong soapsuds alone, and this proved highly efficacious, giving much better satisfaction than any other remedy for the pest ever used at the station. While water alone will roll off from the insects without wetting them, the addition of soap gives a compound that penetrates readily (Bull. No. 30, S. Dakota Agricultural Experiment Station)."

*Calandra remotepunctata* Gyll. it seems has not been noticed heretofore attacking grain, although two allied species, namely, *C. oryzæ* and *C. granaria*, are famous for their depredations. Recently my attention was called to a number of small weevils, which were found in freshly-made soup, and on enquiry being made, it was ascertained that the barley, obtained from a near-by grocery, contained numerous specimens of this insect. It is evident that this species has heretofore been confused with *C. oryzæ* by observers.—WM. J. FOX.

A CURCULIO REMEDY.—"The curculio flies," says a plum grower, "are our greatest enemy. But in Florida I learned of a curious method of saving the fruit, which the flies kill when it is very young. Just as the bloom is falling off, and when the plums are no larger than marrowfat peas, half a dozen small tin cans, empty tomato cans will do, two-thirds full of molasses and water, with a tablespoonful of vinegar added, must be hung from the branches of each tree. The curculio fly will be attracted by the mixture and eat it greedily, forgetting at the same time to sting the baby plums."—*New York Tribune.*

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* Contains new species other than North American. † Contains new genera.

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* Contains new species other than North American. † Contains new genera.

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* Contains new species other than North American. † Contains new genera.

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* Contains new species other than North American. † Contains new genera.

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THE ENTOMOLOGIST, London, June, 1892.—Color variation in the ova of *Biston hirtaria*, R. Adkin. A preliminary list of the insect fauna of Middlesex (cont.), T. D. A. Cockerell. The genus *Melanippe* (cont.), R. South. Spring Lepidoptera in Italy, H. Rowlands-Brown. Notes on the synonymy of noctuid moths (cont.), A. G. Butler.

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* Contains new species other than North American. † Contains new genera.

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THE BRITISH NATURALIST, London, June, 1892.—Portrait and sketch of J. W. Douglass. The Pterophorina of Britain (cont.), J. W. Tutt. The secondary sexual characters of the British Coleoptera (cont.), J. W. Ellis. Local lists.

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LE NATURALIST, Paris, June 1, 1892.—The appendages of Arachnids, A. Goux. New Lepidoptera,* P. Dognin. The artichoke worms,* P. Chretien.

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BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xxxvii, 1, May, 1892.—Contribution to the knowledge of the genera *Lepidiota* and *Leucopholis*,* E. Brenske. The species of the Coleopterous genus *Brahmina* Bl.* id. A new Odonat of the genus *Macromia* discovered by Dr. Paul Preuss near Buea in the Cameroon Mountains,* Dr. F. Karsch. On *Cryptostemma* Guér. as some recent representatives of the fossil Arachnoid order of Meridogastra Thor., id., 1 pl. List of the Orthoptera captured by Dr. P. Preuss in the Cameroons,*† id., figs. Monographic review of the Prionid genus *Callipogon* Serv., A. F. Nonfried, 1 pl. *Capnodes Schilleri*, a new German Perlid,*† E. Rostock. A contribution to the knowledge of the genus *Chordeuma* (Diplopoda) and some notes on the German Diplopod fauna,* C. Verhoeff, 1 pl. On *Sabulicola Cirsii* mihi. id.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxvi, 5, Brussels, May, 1892.—Buprestidæ of India,* C. Kerremans.

## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### LEPIDOPTERA.

*Ebulea fumipennis* Warren, Ann. Mag. N. H. (6), ix, p. 392, California. *E.? straminea*, p. 393, California. *Udea indistinctalis*, p. 394, Sierra Nevada. *Cybolomia extorris*, p. 395, western United States.

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* Contains new species other than North American. † Contains new-genera.

*Dasylophia puntagorda* Slosson, Can. Ent. xxiv, p. 139, Florida.

*Anthocharis flora* Wright, Can. Ent. xxiv, p. 154, Washington.

*Pronuba synthetica* Riley, 3d Rep. Mo. Bot. Garden, p. 141, California. *Prodoxus pulverulentus*, p. 150, California. *P. Y-inversus*, p. 151, N. Mex. *P. reticulatus*, California. *P. coloradensis* Col., p. 152. *P. sordidus* p. 153, California.

## COLEOPTERA.

*Hoplia* 1 sp., *Serica* 2 sp., *Lachnosterna* 4 sp., *Gymnetis* 1 sp., *Derobrachus* 1 sp., Honduras, *Psiloptera* 1 sp. Hayti, Nonfried, Deut. Ent. Zeit. 1891, pp. 257-276.

*Botynella* (n. gen. Coccinellidæ) Weise, Deut. Ent. Zeit. 1891, p. 286. *B. 5-punctata*, *4-punctata*, p. 287, Cuba. *Smilia* n. gen.; *S. Felschei*, p. 288, Florida.

Three genera, seventy species Phytophaga, Mexico, Central America, Jacoby; Biol. Cent.-Am. Coleop. vi, pp. 313-374.

Five species Coccinellidæ, Mexico, Central America; Gorham, Biol. Cent.-Am. Coleop. vii, pp. 161-168.

*Callipogon Hauseri* p. 20, *C. Friedlaenderi*, p. 22, Honduras; Nonfried, Berl. Ent. Zeit. xxxvii.

## DIPTERA.

Eighteen new genera, twenty-three new species Tachinidæ, Townsend, Trans. Am. Ent. Soc. xix, 13-15, United States.

*Sarcodexia* (n. gen. Dexiidæ) Townsend, Journ. Inst. Jam. i, p. 105. *S. sternodontes* p. 106, Jamaica.

*Phora cimbicis* Aldrich, Can. Ent. xxiv, p. 143, S. Dakota. *P. setacea*, p. 144, S. Dakota. *P. luggeri*, p. 145, Minn. *P. minuta*, p. 146, S. Dak.

## ORTHOPTERA.

*Acanthoprion* (n. gen. Pseudophyllidæ) Pictet and Saussure, Icon. Sauter. vert., p. 26. *A. aztecum* p. 26, fig., Oudonga, Mex.

## HYMENOPTERA.

*Gorytes nevadensis* Fox, Can. Ent. xxiv, p. 150, Nev. *G. atrifrons*, p. 151, Nevada. *G. mirandus*, p. 152, Nevada. *G. albosignatus*, p. 152, Montana. *G. rufocinctus*, p. 153, Washington.

## NEUROPTERA.

Eight species Ephemeridæ, Arizona, Mexico, Central America; Eaton, Biol. Cent.-Am. Neurop. pp. 1-16.

## HEMIPTERA.

Issida: *Ticida* n. gen. Uhler, Trans. Md. Acad. Sci. 1891, p. 143. *T. cingulata*, p. 144, California. *Belonocharis*, p. 145; *B. fumida*, p. 146, California.

*Cicada cinctifera* Uhler, l. c., 1892, p. 156, N. Mexico, California. *C. reticularis*, p. 157, Jamaica. *Tibicen cruentifera*, p. 161, Nevada. *T. Blaisdellii*, p. 163, California. *Odopoea cariboea*, p. 169, San Domingo. *O. domingensis*, p. 172, id. *Cicada sordidata*, p. 175, Florida. *C. reperta*, p. 177, Florida, North Carolina, Louisiana.

Henicocephalina: Uhler, l. c. p. 180, *Hymenodectes* n. gen.; *H. culicis* p. 181, United States; *Hymenocoris*, p. 181, *H. formicina*, p. 182, California. Capsidæ: *Hadronema pulverulenta*, p. 183, United States.

## Doings of Societies.

Entomological Society of Washington, Thursday, April 7, 1892. —Mr. George D. Bradford, of New York, was elected a corresponding member of the Society. The discussion of Dr. Gill's paper entitled, "The Larva of Insects as an Intercalated Stage," engendered at the preceding meeting of the Society, was taken up and participated in by Messrs. Stiles, Riley, Gill and Banks. Dr. Riley presented two papers, one "On certain peculiar Structures of Lepidoptera," and the other, "Descriptions of new Prodoxidæ." He spoke of various interesting structures of the Prodoxidæ, calling attention more particularly to the saw-like ovipositors, the maxillary tubercles, the cenchri-like spots on the thorax and certain radiate and chitinous bodies in the *receptaculum seminis*. The remarks were illustrated by large figures. He also spoke of the resemblance of *Pronuba synthetica* to certain saw-flies. Specimens of the insects described were exhibited. Prof. Riley's second paper was read by title only, and was presented for publication. The discussion of these papers was participated in by Messrs. Howard, Marlatt and Stiles. Prof. Riley also presented a paper on "Coleopterous Larvæ with Dorsal Appendages," in which he described the larva of various species of *Mordellistena* having rows of tnbercles on the back which facilitate moving more readily in the hollows of plants and the larger burrows of other insects. Discussed by Messrs. Smith and Schwarz. Mr. Doran read a paper entitled "On the Heat Produced by *Sylvanus cassiæ*," in which he recorded some observations which he had made on the amount of heat produced by these beetles in meal, but offered no definite explanation of the phenomenon. Discussed by Messrs. Marlatt, Riley, Austin and Schwarz.

Thursday, May 4, 1892.—Prof. H. E. Summers, of Champaign, Ill., was elected a corresponding member of the Society. Mr. Ashmead presented some notes on the genus *Enicocephalus* Westw. Biographical and critical notes were given, and the announcement was made of the discovery of representatives of this genus in material sent to Dr. Riley from St. Vincent, and announced also the discovery of a new species in Utah by Mr. Schwarz. The genus cannot be included in any of the present subfamilies in the Reduviidæ, to which it belongs, and the new subfamily Enicocephalinæ was erected for it. The new species was named *Enicocephalus schwarzii.* Discussed by Messrs. Schwarz, Riley, Ashmead, Hubbard and Heidemann. Mr. Malley read a paper on *Micromus hispidus*, pointing out some observations on the food and life-habits of this insect made in the South, where he found it feeding on Aphides. Discussed by Messrs. Ashmead and Riley. Mr. Howard presented a note on "The Hibernation of Carpenter Bees," showing that the males as well as the females winter over. Discussed by Messrs. Riley, Ashmead, Hubbard, Marlatt and Howard.

A paper by Dr. Bergroth, of Tammerfors, Finland, entitled "Notes on the Nearctic Aradidæ," was read by the Corresponding Secretary, to whom it had been sent for publication in the Proceeding of the Society.

Mr. F. M. Webster had forwarded a paper for presentation at this meeting of the Society on "The food-plants of the Lixi." The communication gave a view of the knowledge of the habits in this respect of this genus of beetles, both of foreign and American species. Discussed by Mr. Schwarz.

Mr. Hubbard presented a note on the larva of *Amphizoa*, and gave an interesting resumé of the disposition of this anomalous insect in systematic classification by various authors, together with the arguments adduced in support of the diverging views. He presented drawings of the larva and described its habits. The communication was discussed at some length by Mr. Schwarz, and also briefly by Messrs. Ashmead, Gill, Riley and others.

Mr. Masius gave his recent experience with the poisonous bite of *Benacus griseus.* In handling specimens of this insect he had received a severe sting on the hand which proved to be very painful. The pain and swelling increased for two or three days and became so troublesome that a physician was consulted. In five days the trouble had nearly disappeared, although at the time of the meeting the injured part was still sore. Discussed by Messrs. Howard, Ashmead, Riley and others.

C. L. MARLATT,
*Rec. Secretary*, pro. tem.

## OBITUARY.

"Prof. HERMAN CARL CONRAD BURMEISTER was born at Stralsund, Jan. 15, 1807, and died from the result of an accident at Buenos Ayres, May 2, 1892. Prof. Burmeister was the author of many valuable works on entomology. He was Professor of Natural History at Halle, having been elected to the chair in 1842. About 1850 failing health induced him to spend two years in Brazil. In 1861 he resigned his professorship at

Halle, and finally settled at Buenos Ayres, where he became director of the Museum of Natural History, a position he held to within a few days of his death. He continued to publish on Entomology, the insects of his new home affording ample materials for many valuable papers, both in publications of the National Museum and in European journals, and also a work on the physical features of the Argentine Republic with an atlas, which latter included two parts devoted to the Lepidoptera of the country. The Royal Society's catalogue of scientific papers enumerates no less than 164 articles (exclusive of separate works) from his pen down to 1883, and there have since been many more. He has been succeeded as Director of the Museum by Dr. C. Berg."

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JUST after the MS. of our June number went to the printer we learned of the death of Dr. CARL AUGUST DOHRN, at Stettin, in the 86th year of his age. Dr. Dohrn was interested in Coleoptera, but he had a regard for insects of other orders, if only for the reason that it brought him in communication with the lovers of them. On the death at the comparatively early age of 39, of Dr. Wilhelm Schmidt, the first president of the Entomological Society of Stettin, which had been founded in 1839, C. A. Dohrn, who was then officiating as secretary of the society, was selected for the vacant post, and at the ensuing anniversary meeting, Nov. 5, 1843, was duly elected president, a position he continued to hold for upwards of forty years. The "Entomological Zeitung," which is the organ of the Stettin Society, was edited by Dr. Dohrn as long as he remained president, and contains copious articles by him, many of them descriptive of new species of beetles, and many relating to authors and their works and notes on travel. His own collection of Coleoptera was very extensive, almost unique in completeness of families and genera. Dr. Dohrn besides being an entomologist, was an accomplished linguist, litterateur and musician.

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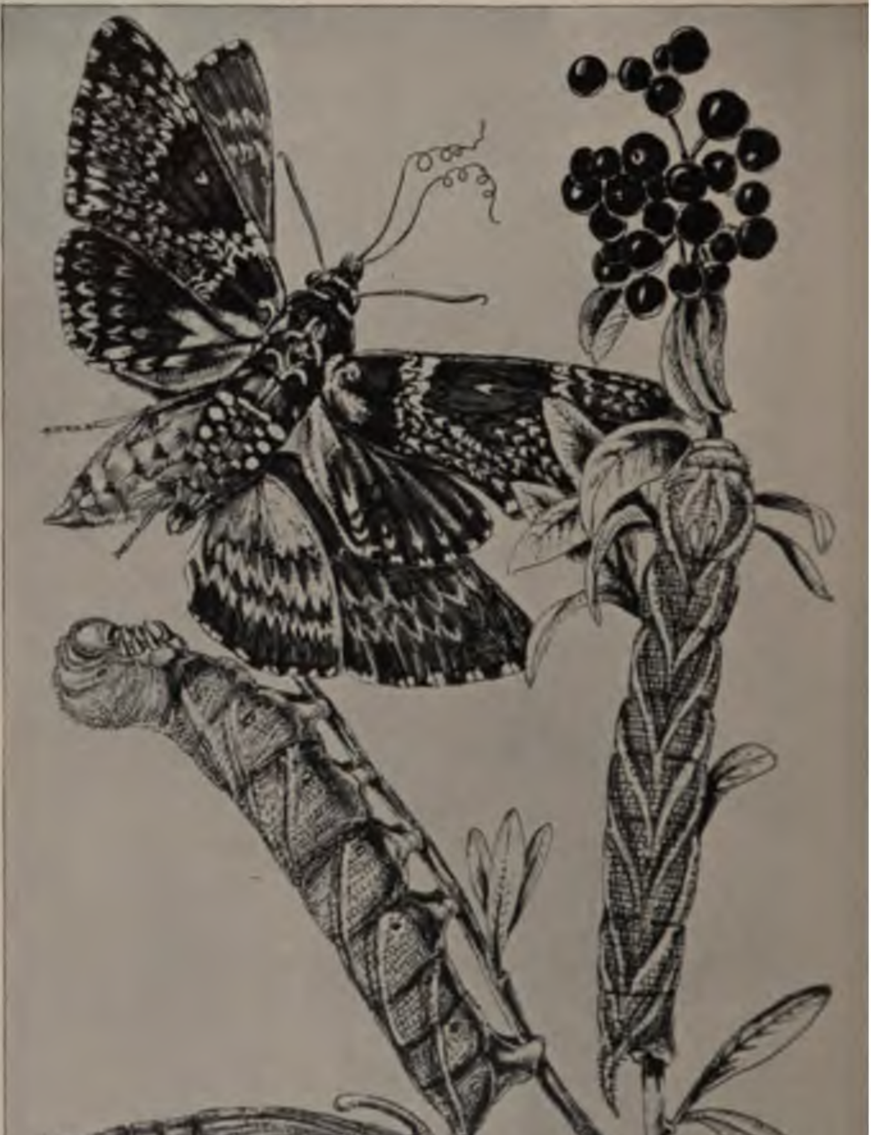
ENTOMOLOGICAL NEWS for June, was mailed May 27, 1892.



SPHINX RUSTICA.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. OCTOBER, 1892. No. 8.

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OUR plate this month represents the upper and under side of *Sphinx rustica* Fabr., with its larva and chrysalis. The original drawing was made by the late Titian R. Peale, the artist entomologist. The plate represents the objects reduced in size, the moth expanding five inches and the full-grown larvæ being about four and a half inches in length.

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## The Introduction of the Ailanthus Silk Worm Moth.

By EDW. J. NOLAN, M. D.

The attention of Dr. Thomas Stewardson, then Corresponding Secretary of the Academy of Natural Sciences, of Philadelphia, having been drawn, in 1860, by various notices published in the "Bulletin of the Society of Acclimation" and other French journals, to the recent introduction of the Ailanthus Silk Worm, *Attacus cynthia*, into France, he succeeded in obtaining from Mons. Guerin-Meneville specimens of the caterpillar, the fly, the cocoon and the silk in various stages of preparation.* In June of that year a number of eggs were also sent to him from Paris, but they were nearly all spoiled in consequence of being hatched on the voyage. Another lot sent a few days later reached him in good condition, and from these, with the assistance of a silk manufacturer in the neighborhood of Philadelphia, he succeeded in raising a few worms, which formed their cocoons in July.

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* Proc. Acad. Nat. Sci. Phila., 1861, p. 525.

Toward the middle of August the moths made their appearance, and the eggs laid by them hatched their worms from August 30th to September 3d. Some of these were placed by Dr. Stewardson on a tree in a private garden; some were set out on trees in the suburbs, and others were fed by him in a room at his house. Of the first lot, nearly all came to maturity: many of those placed in the country were destroyed by birds, and about forty cocoons were secured from those raised in the house. The success with the worms placed on the trees, except for the attacks of birds, was entirely satisfactory, and proved to the experimentors, apparently, the possibility of raising two crops of the insect during the proper season if reasonable care were taken to preserve them from injury.

On the appearance of the first crop of caterpillars in the Spring or early Summer of 1862, Dr. Stewardson was still sufficiently interested in them to supply them with food, but the work was becoming irksome. As Corresponding Secretary of the Academy, most of his leisure time was spent in the room in the northeast corner of the building, which was then situated at Broad and Sansom Streets, and now forms part of the Lafayette Hotel. My duties as Assistant Librarian placed me in constant communication with the doctor, and I became intensely interested in his caterpillars, their growth and their work. I was, therefore, delighted when the opportunity was given to me to take charge of them and look after their allowance of Ailanthus leaves. The supply was abundant, and fresh, crisp leaves were placed in glass jars in the Librarian's room as often as a change was necessary. The work was continued during the fall of 1862 and the Spring and Summer of 1863. In the Autumn of the latter year I began the study of chemistry with Dr. Robert E. Rogers, in the University of Pennsylvania, preparatory to matriculating as a student of medicine. My time was then so occupied that it was increasingly difficult to look after my pets, which, in spite of the fact that not all of the successive broods had been preserved, numbered at the time some hundreds and required constant attention to save them from starvation.

The yard of Dr. Roger's laboratory, at the back of the Medical Department of the University, which was then located on Ninth Street above Chestnut, where the Post-office now stands, adjoined the yard of a house formerly occupied, it is said, by the distinguished chemist, Dr. Hare. A large Ailanthus tree grew here, the branches of which extended over the premises of the laboratory. The more vigorous of the silk worms (so called) were selected, and, with the consent of Dr. Rogers and the occupant of the house referred to, were placed on the branches of this tree early in October, 1863, to the number of a couple of hundred. Here they were left to their fate, and, in truth, entirely forgotten in the press of other interests until the Winter of the following year (1864), when, on examining the tree, about forty cocoons were found, the petioles of the leaves on which they were spun being fastened to the otherwise naked branches by strands of silk in the way so characteristic of the Ailanthus moth. They were left here undisturbed, the survivors of the original colony of the year before. The tree was vigorous, was secluded from storms and visited by few birds. There is, therefore, no reason to doubt that a large number of flies had been distributed from this point during the preceding season, and it may, therefore, be considered the main centre from which this interesting and beautiful addition to our local fauna has proceeded, although some, of course, have descended from the out-door colonies placed by Dr. Stewardson himself.

The species was brought from China to Turn in 1857, and its cultivation in France was begun the following year. Dr. Stewardson hoped to benefit his fellow-citizens by bringing the insect to America, but its introduction does not seem to have produced much practical result, although the fly, with increasing frequency, forms an interesting feature of the local collector's cabinet, and may therefore be regarded as having come to stay.

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## LARVA HUNTING IN WINTER.

By Richard E. Kunze, M. D., New York.

With the swamps well frozen over, although light snowsqualls made it disagreeable enough, I hunted the larvæ of *Arzama obliquata* the first time this Winter, Feb. 7, 1892. They bore the stems of *Typha latifolia* or Cat-tail flag, and Great Reed Mace, so called. Inasmuch as they hibernate in the galleries bored out of the pithy part of the stalk of *Typha*, which line the shores of small creeks and rivers traversing the saltmeadows of the Atlantic sea-board, they are readily found. Dr. Kellicott, regarding hibernation of *obliquata*, states that the larva leaves the stem in the fall and crawls into the earth or old wood to hibernate until April or May, vide "American Naturalist," vol. xvii, p. 1172, 1883. On Long Island this larva is abundantly found hibernating in the stem of *Typha* throughout the whole Winter. I have taken larvæ out of galleries only a few inches above the frozen water line, and with thin sheets of ice formed by the moisture of the stem, completely surrounding the outstretched larva, which so filled up this gallery, that it seemed to be tightly wedged in place. Removing a part of the stem and carrying it in my pocket a short time, the larva soon showed great activity by moving up or down the narrow gallery at a lively speed, either backwards or forwards at pleasure. Have found them as high as two feet above water line, in the borings of thick stems, free from moisture, and all these stalks exhibit a number of openings as large as thickness of a pencil, so that they are easily singled out. I find more near where the fresh and brackish waters meet, than in the open salt meadows where *Typha* grows thickest. In fact, a few Cat-tails of very vigorous growth in a fresh-water swamp adjoining salt meadows, are preferable to an acre of the former. In an hour's time I found seven larvæ, and on examining some *Typha* stems I brought home for another purpose I found three more, making ten in all, of which one represented another species.

Perhaps it is not superfluous to state that the larva is mature before hibernating and pupates in the stem of *Typha*, if undisturbed, early in Spring. I found lots of empty pupa cases in stems more than a year old. The woody fibre of these withstands the effect of elements fully two years. In hunting larvæ I have often split open a two-year old stem in a mistake, my benumbed fingers not readily detecting the softer texture of the latter from the more firm and newer growth.

Sometimes more than one larva is found in a stem, and I think the flower-bearing stalk being strongest, yields more than the leaf-bearing kind. In the stronger stems I found larvæ three feet above the ground. I place the collected larvæ in wide-mouth bottles containing sphagnum, leaving those which have not been disturbed in their respective stems. After pupation, which some do in the moss and others in their galleries, the imago has an opportunity to crawl upon the stem and develop after emerging. I place the larvæ in a cold hallway or out-house, during Winter. Have collected such from December up to late in April.

Dr. Riley states in "American Naturalist," vol. xvii, p. 1169, that *A. obliquata* also bores the stems of *Sagittaria* (Arrow-head) and *Pontederia* (Pickerel Weed), whereas Dr. Kellicott, in the same work, mentions another food-plant, *Sparganium* (Bur Reed), but it is bored much less so than *Typha*.

This larva, and other species of such borers, could not well hibernate in either *Sagittaria* or *Pontederia*, the stems of which are too succulent and perish with the first killing frosts of Winter.

(To be continued.)

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## Description of a new Solitary Wasp.

By Wm. J. Fox, Phila., Pa.

**Odynerus** (*Odynerus*) **Aldrichi.**

♀.—Clypeus with coarse, separated punctures, with longitudinal folds or striæ, which are more obvious when viewed from certain positions, bidentate anteriorly and with a rather strong depression just behind the teeth; head coarsely and closely punctured, the punctures becoming sparse on the cheeks; first joint of flagellum equal in length to the two following united; thorax punctured like the head; scutellum strongly impressed medially; postscutellum when viewed from the front, crenulated; metathorax strongly depressed, with a strong, somewhat triangular excavation at base, rugose towards the sides, the metapleuræ with irregular, oblique striations; when viewed from behind the lateral margins of the metathorax are seen to be emarginate below the middle; hind coxæ armed with a strong tooth near the base on outer edge; first abdominal segment above with coarse, separated punctures, those on the second much finer, on the third segment the basal half is microscopically punctured, while on the apical portion it has coarse, close, shallow punctures; beneath the basal portions of the segments are finely punctured, the apical portion strongly so; black; two transverse, curved spots on clypeus at base, two minute dots behind antennæ, inner eye orbits on lower portion, large spot at top of cheeks, prothorax above, anteriorly, tegulæ, except outer margin and a spot near base which are brown, spot on mesopleuræ above, posterior margins of scutellum and postscutellum, the marks narrowed on each side, all bright yellow; a large spot on each side of first abdominal segment also yellow, connected by a greenish white band on apical margin of the segment, apical margins of dorsal segments 2-5 and a large spot on apical margins of ventral segments 2, 3 and 4, laterally, also greenish white; scape beneath and the legs, except coxæ, trochanters and base of femora, rufo-testaceous; wings subhyaline, apical margins fuscous; nervures and stigma deep black; the median cell of fore wings with a ferruginous stain, the costal and median nervures beneath colored like the legs.

♂.—Clypeus deeply and roundly emarginate anteriorly, with fine, sparse punctures; first joint of flagellum scarcely as long as the two following united; clypeus entirely, scape beneath, and coxæ beneath yellow; legs with a yellowish tinge; flagellum beneath testaceous.

Var. Greater part of legs and hind margins of the abdominal segments yellow.

Brookings, S. Dakota (J. A. Aldrich); Colorado (coll. Amer. Ent. Soc.). The color of the legs will distinguish this species. Appears to occur abundantly from May 30th to June 10th, as Mr. Aldrich sent me about thirty specimens.

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## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

The little family Heterogynidæ belongs, in most respects, to the Zygænid series. In it the primaries have two, the secondaries three internal veins, as in the Pyromorphidæ. It differs, however, in having a distinct, free costal vein to the secondaries, while the absence of this vein is one of the distinctive features in the immediately preceding group of families. It is, perhaps, questionable whether we have any true Heterogynidæ in North America.

Following these, comes a small series of what may be termed Arctiid families. All agree in having only a single internal vein to the primaries and two in the secondaries. The costal vein of the primaries arises from the subcostal about one-third the distance from base. In one instance, *Euerythra*, it is altogether wanting. Vein 5, in both primaries and secondaries, belongs to the median series, and arises close to vein 4. The larvæ, in the majority of instances, are hairy caterpillars, usually transforming in a loose cocoon, in the manufacture of which the hairy clothing is used to eke out the scanty supply of silk. To facilitate this, the hair is quite commonly barbed or branched, so that it felts easily.

The Nycteolidæ are small moths that are usually puzzles to the amateur. They have the wing form of Tortricids, and much of their habital appearance, but have the venation above described. Unlike all the other Arctids, however, the internal vein of the primaries is forked at the base. That is to say, two parallel veins start at the base and unite a short distance beyond into the normal single vein. The ocelli are present. We have as yet but two genera with three species described from our fauna, and of these *Sarrothripa lintneriana* is the common eastern species.

The Pericopidæ are very uncertainly separated from the Arctiidæ. In venation they differ chiefly in that veins 3 and 4, and 7 and 8, of the secondaries are stalked; that is, a single vein only starts at the point of origin, and this divides on its way to the outer margin. The species are often rather frail and long-winged, and have been compared to the Heliconinæ of the diurnal Lepidoptera. Some of the species, American and foreign, which were formerly referred here, have been of late proved to be Geometridæ!

The Lithosiidæ differ from the Arctiidæ by the absence of ocelli, but agree with them in almost all other structural characters. In the typical genus the primaries are narrow and elongate, while the secondaries are broad and proportionately large, but in our American forms we have all gradations from this to a really geometriform wing. It may not be amiss to say that here, too, an interesting amount of uncertainty exists—whether some species are not Geometridæ rather than Lithosiidæ. Some of the species resemble Noctuidæ, and others are sometimes mistaken for micro-lepidoptera. A reference to the venation will, in most cases, settle the question at once. There is a tendency in this family towards a loss of some of the veins of the secondaries, indicating an approach to the Syntomidæ, already treated.

The Arctiidæ differ from the Lithosiidæ by the presence of ocelli. They are larger, as a rule, but sometimes with very similar wing form. Indeed, almost any desired variety of wing form can be found in this family, which, by its bright and often strongly contrasting colors, is one of the most attractive to collectors. Two subfamilies are indicated in the American fauna: the Cydosiinæ, which have a roughened or tuberculate front, and the Arctiinæ, in which the head is normal, not rough or tuberculate. In many of the species in this family there is a tendency to a reduction in the spurs of the hind tibiæ, and frequently one of the pairs is wanting.

In volumes xxi and xxii of the "Canadian Entomologist," will be found an annotated catalogue of the Arctiidæ, in which the genera are described in some detail and the venation of the leading types is figured, and to this I would refer the student for further information concerning this family.

———o———

## STUDIES IN NORTH AMERICAN MEMBRACIDÆ, II.

By F. W. GODING, M.D., Ph.D.

### PUBLILIA Stal.

**Publilia bicinctura** n. sp.—Similar to *modestus* Uhler; more depressed and slender, with two diagonal white bands. Head broadly oval, unequal, blackish brown, with three smooth, slightly elevated, light spots, arranged in a triangle; eyes black; prothorax light green, with two whitish bands, the first originating near middle of inferior border passes diagonally forward and upward, crossing the median carina in the sulcus, the second starting about midway between the first and the apex parallel to it; both are narrowly bordered with dark brown, and several longitudinal lines of the same color mark the surface posterior to the first band; apex more attenuated than in its congeners; base of prothorax with a short, impressed, black line above each eye; tegmina clear, veins white; below piceous, upper surface of femora black. Legs otherwise light brown. Abdomen dark brown. Length 5 mm.

Described from two males and two females. Collected by Prof. Gillette in June and August, on *Glycyrrhiza lepidota.*

*Hab.*—Fort Collins, Colorado.

One example had the bands obsolete, and two had the dorsum largely ferruginous (types in coll. F. W. G.).

### STICTOCEPHALA Stal.

**Stictocephala gillettei** Godg. ♂.—Differs from ♀ as follows: impressed lateral line extends from base of tegmina to apex of thorax; lateral carinæ meet at about the middle, and apex is less curved. Head grass-green, surface unequal; prothorax clouded with yellow; tegmina transparent with a tinge of green, and densely punctured; chest very pale green; femora yellow, covered with hairs; tibiæ marked with brown, tarsi light brown.

Collected by Prof. Gillette at Trinidad, Col., May 14, 1892.

### HELIRIA Stal.

**Heliria scalaris** Fm. ♂.—Castaneous, speckled with yellow. Head yellow, mottled with castaneous, very broad between eyes, which are black, ocelli nearer each other than the eyes; prothorax castaneous, mottled with yellow, anteriorly with the yellow predominating, densely punc tured; median carina prominent, mostly shining black; crest compressed vertically just behind middle; above each eye a black impressed dot; a yellow stripe along posterior edge of crest half way to apex; sides posteriorly with several longitudinal carinæ; about middle of lateral borders a dark brown spot surrounded by a yellow ring; lateral angles produced; tegmina vitreous, punctured, veins piceous, base with piceous spot and posterior fourth nearly black; chest yellow, marked with piceous, hairy. Abdomen black, posterior edges of segments yellow, last segment brown. Legs testaceous, mottled with brown, tibiæ triquetrous and spined, tips of tarsi piceous. Length 8 mm.; width between lateral angles 4 mm.; altitude 5 mm.

*Hab.*—Fort Collins, Col. Described from a ♂ taken by Prof. Gillette, July 4, 1892.

### STICTOPELTA Stal.

**Stictopelta marmorata** ♀, n. sp.—Form similar to *nova;* castaneous, mottled with yellow, the latter color predominating in anterior part. Head yellow, nearly quadrangular, a semi-circular line around apex, a spot contiguous to each ocellus, and a spot between these and each eye, dark brown; eyes very dark green, surrounded by a yellow ring; prothorax castaneous, mottled with yellow, darkest posteriorly; at the base, above each eye, is a shining, irregular, impressed scar; lateral borders white, this color extending from above base of tegmina nearly to apex, the tip of which is black; punctured lightly throughout; tegmina vitreous yellow, veins of corium piceous, apex lightly clouded; chest and abdomen yellow, ovipositor castaneous; femora yellow, tibiæ same color, outer surface brown, except the anterior pair; tarsi yellow, tips darker. Length 9 mm.; width 4 mm.; altitude 3 mm.

Described from one ♀ collected by Prof. C. H. T. Townsend.

*Hab.*—New Mexico.

### Subfamily CENTROTINÆ Stal.

**Centrodontus** n. gen.—Head broad, short, almost spindle shaped, eyes large, globular; prothorax superiorly developed into a rounded gibbosity, lateral angles with a rounded tubercle, but destitute of horns; median carina percurrent; posterior prothoracic process extends beyond scutellum, which is bidentate at extremity, the process lying between these teeth; it is straight, long, narrow, sides nearly parallel, sometimes sinuate superiorly. Abdomen long, spindle shaped, reaching nearly to apex of tegmina; tegmina opaque, convex externally, when closed forming a concavity enclosing the abdomen; veins very prominent, the usual venation being interfered with by numerous irregular venules cutting up the regular cells; claws gradually attenuated to apex. Wings with three apical cells. Legs simple, posterior trochanters unarmed, feet simple.

Type of genus *Gargara atlas* Godg., described in ENT. NEWS, vol. iii, p. 110.

I am not acquainted with Signoret's *Gargara variegata* from Calabar, but judging from the description it may belong to this genus.

# NOTES ON THE ENTOMOLOGY OF COLORADO—I.

By T. D. A. Cockerell.

Notwithstanding the large amount of descriptive matter in our literature, relating to the insects of Colorado, the information available about the distribution of the species is very slight. Unless one has visited the State, I suppose it must be difficult to realize the enormous differences of country and climate, and correspondingly different faunæ, comprised within the boundaries of Colorado. Until recently, at least, it seems to have been the eneral opinion that to cite "Colorado" as the locality of a new pecies was enough, and so lately as May of the present year I find a new insect described with no better indication of the habitat, hough it was received from Prof. Gillette, who would presumably have given the proper details for the asking. In the folwing notes I give, indeed, but scanty information about a few calities in the State; but such as it is, it may serve to indicate me facts which could not be gleaned from what has hitherto een published. I wish that others could be persuaded to follow the same lines of investigation, so as to substitute a fairly complete account for the present fragmentary records. For the identification of the insects referred to in this and future notes of the series, I have been greatly indebted to Mr. Ashmead, Dr. J. Hamilton, Prof. C. V. Riley, Mr. Hy. Edwards, Mr. W. H. Edwards, Dr. Horn and the U. S. National Museum. Unless a statement is made to the contrary, it is always to be understood that the imago is referred to, as is usual. In addition to the locality and the date, I have found it an excellent plan, especially if one has no aneroid, to note some of those forms of animal or plant life in the locality, which indicate the climate and altitude. Sometimes trees, etc., occur on mountain-sides in singularly well-defined zones; thus coming down from the head of Surface Creek to the Gunnison River, in Delta County, on the 5th of October, 1887, I noted the following zones:

(1) Zone of Spruce (*Picea engelmanni* Parry).
(2) " Quaking Asp (*Populus tremuloides* Michx.).
(3) " Oak Scrub (*Quercus undulata* Torr.).
(4) " Cedars (*Juniperus virginiana* L.) and piñons (*Pinus edulis*).
(5) " Sage brush (*Artemisia*).
(6) " Greasewood (*Chenopodiaceæ*).

I have nowhere else found the zones quite so well marked, or so easy to observe, but throughout the mountains they are to be seen more or less clearly. In the fall, when the Spruce is green, the Quaking Asp yellow, and the Oak Scrub red, very beautiful effects are produced. In Custer County, I have found it convenient to divide the fauna as follows :

(1) High-Alpine fauna, living from 10,000 feet upwards.
(2) Mid-Alpine " " " " " down to 6500.
(3) Sub-Alpine " " " 6,500 " " the foothills.

These three faunæ, as will be explained in detail in a paper now preparing, are very different from one another. The terms may be used also when referring to other counties, but it must always be remembered that even between north and south Colorado there is a difference in the faunæ of a given altitude. Therefore, the tree-zones are in some ways more useful than a statement of the altitude. For detailed work, I divided Colorado into 78 counties and vice-counties, included in nine river basins, of which four are on the Atlantic, and five on the Pacific slope. Grand R. basin, on the Pacific slope, includes seventeen of these divisions, viz.: Saguache, N. W.; Hinsdale, N.; San Juan, N.; Ouray; Montrose, E.; Gunnison, S. (S. of Gunnison R., Taylor R., Willow Creek); Gunnison, N.; Mesa, N. E.; Delta; Pitkin; Eagle, S. (S. of Eagle R.); Eagle, N.; Summit, N. (N. of Little Snake R., Dillon, Cañon Creek); Summit, S.; Garfield, S.; Routt, S. E.; Grand, S.

## SAGUACHE, N. W.

This is a triangular piece of country N. W. of the Cochetopa Hills, upper mid-alpine in character. In the Summit Park region, by the head of a tributary of Los Pinos Creek, *Populus tremuloides* and *Achillea millefolium* were noted. This was on October 13th, and the only insect recorded was a red *Chironomus* larva, similar to those found in England. The next day there was a snow-storm.

## MONTROSE, E.

Contains low sub-alpine and mid-alpine districts, with great differences of climate. In 1887 I traveled from the Gunnison River *via* Montrose to Cimarron. The Uncompaghre Valley, north of Montrose, is a great barren plain, consisting of dried mud, baked and cracked in the sun; with scattered and solitary Chenopodiaceæ and such plants, and stunted cacti. On October 6th a strong breeze was blowing, and the scanty vegetation was covered with dust. The heat was very great, so that one looked with some longing at the perpetual snow on the distant mountains. Two days after, traveling up Cedar Creek from Montrose, rain came on, and the abundant sticky mud of the roads made it nearly impossible to proceed. Although the temperature was not down to freezing point, I do not think I ever suffered so much from the cold as on this journey. Early next morning numbers of robins (*Merula migratoria*) passed on their migration to warmer regions. Below Montrose, *Malvastrum coccineum* was noted. This malvaceous plant is easily recognized, and is useful for indicating the kind of locality. It occurs on dry, open ground, up to about 8000 feet, or sometimes rather higher, belonging to the sub-alpine and lower, mid-alpine regions. On Cedar Creek, October 9th, species of *Colias*, *Coccinella*, *Vespa* and *Lucilia* were noted.

At Cimarron (6906 feet) I found a *Geophilus*, and also a new ichneumonid, since described by Mr. Ashmead as *Thersilochus montanus*. In the same neighborhood three beetles were obtained, afterwards identified as *Harpalus amputatus* Say, *Pterostichus longulus* Lec. and *Amara remotestriata* Dej. These three are all found also in the mid-alpine zone of Custer County.

## GUNNISON, S.

Mid-Alpine, with some pretty and little-settled country. There is a pine wood between Allen and Powderhorn, which is rather unusual, firs being the dominant conifers in Colorado. Judging from the distribution of the two genera *Abies* and *Pinus*, it seems as if the former were ousting the latter; so we get, as in Custer County, *Pinus ponderosa* chiefly fringing the Spruce forests at their lower limit; and at and near timber-line a high-alpine *Pinus* of a different species, maintaining a somewhat precarious existence. When the pines were dominant, they seem to have gone a little higher than the firs, and hence the finding of logs and roots a little *above* the present timber-line. If this view is correct, it cannot be doubted that these changes have affected the insect fauna. The insects taken or noticed were *Bembidium indistinctum* Dej. and *Lucilia* sp. by Little Blue Creek; *Vespa* sp. on the East Twin Mesa; and *Pterostichus luczotti* Dej., the locality not exactly noted. A *Geophilus* was also found.

It will very likely be objected that the above notes are hardly entomological at all, and I send the paper with some fear lest it should go into the editorial waste-paper basket on that account. But my defence is this: though we may interest ourselves in beetles or moths, or even in a single genus only, nature is a whole, of which every part depends, more or less, on every other. In Entomology, the study of *environments* is scarcely begun in any serious fashion, but yet we may well believe that it will lead to a better understanding of the *reason* of things than almost any other method of research. Future papers of this series will deal with other counties in which more insects were obtained.

# ENTOMOLOGICAL NEWS.

Published monthly (except July and August), by the Entomological Section of the Academy of Natural Sciences, of Philadelphia, with the endorsement of the American Entomological Society. It will contain not less than 240 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., OCTOBER, 1892.

WITH this number of the NEWS we have inaugurated a new department; that of Economic Entomology. We were fortunate in securing the services of Prof. John B. Smith to take charge of it as editor, and the NEWS and its subscribers are to be congratulated. Prof. Smith, as late curator of the Department of Entomology of the United States National Museum and at present State Entomologist of New Jersey, has had a ripe experience in this branch of Entomology, and we confidently predict this, our new departure, will become one of the most interesting features of the journal. Economic Entomology is growing in importance every day, and no one can fail to see its great usefulness, and while much has already been accomplished, we predict a great future for this part of our study. Prof. Smith, in his preliminary remarks, maps out the scope of the department, and what will follow each month cannot fail to be interesting, instructive and useful to all our readers, but more especially those in any way interested in agriculture or horticulture.

An Atchinson (Kan.) woman has brought up her chickens on the bugs collected from the machinery at the electric light station every morning.

# DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

IT is the intention of the editor of this department to keep the readers of the NEWS informed of the main lines of work done and results obtained by the economic entomologists, as evidenced in the Bulletins and Reports received. It is also desired to make it a means for the communication of new results attained by workers, which can be given here in brief, in advance of the more detailed accounts in the Experiment Station publications. The object is to give results or abstracts, rather than detailed accounts of experiments, and co-operation is invited, to aid in making this feature not the least valuable part of the NEWS.

The "Horn Fly," *Hæmatobia serrata*, is still spreading, and has covered a vast new territory during the past year. It now extends from Florida to Canada, and westward nearly to the Mississippi, causing alarm wherever it makes its appearance. There are none of the sensational accounts so common when it first appeared, but the facts are sufficiently bad. One curious, and somewhat encouraging fact is, that in New Jersey, which was one of the first, if not the first State invaded, the pest has very decidedly decreased in numbers, and is very seldom complained of. It seems now no more abundant than the common native cow-fly, *Stomoxys calcitrans*, and, indeed, in some of the localities most infested two years ago, is now scarcely noticed. There has also been a decided change in habit in New Jersey. That peculiarity which induced the common name "Horn Fly," has almost entirely disappeared. Nowhere did I observe any clustering about the base of the horns during the present season, and none of the farmers have noticed it. They now frequent the flank or the shoulder in company with *Stomoxys*. As to remedies, little that is new has been discovered. Spraying the cattle with the kerosene emulsion has proved very successful in some hands, while fish oil with an admixture of carbolic acid is a favorite with others. Spreading the droppings in the pasture every two or three days makes a cheap and certain way of preventing the larvæ from attaining maturity. In the stable, the droppings may be mixed with land plaster to absorb the liquid and make the mass too dry to serve as food for the maggots.

Among the imported pests, *Zeuzera pyrina* is causing great injury in Central Park, New York. Mr. E. B. Southwick exhibited, at Rochester, some very interesting specimens of the injury caused by this larva: trunks and branches of considerable size being completely girdled. Like so many introduced species, it is far more injurious in its new home, than it ever was in its own country, and the very great number of species of trees and shrubs attacked, makes it particularly obnoxious in a large park which depends so much for its beauty and attractiveness upon the variety of vegetation contained. No very effective means of combating this insect have been discovered as yet.

As an example of a slowly spreading insect, *Crioceris 12-punctatus* L. may be cited. It has been known from the vicinity of Baltimore for many years, but has been found for the first time in New Jersey during the present season. Curiously enough, I found it on volunteer asparagus only, though cultivated beds were just across the fence. It has never been as troublesome as its congener, *C. asparagi*, and is fully as pretty a beetle. This *C. asparagi*, by-the-bye, is fairly well controlled now-a-days by growers in New Jersey; they either cut all the shoots in the bed, forcing the beetles to oviposit on the heads which are sent to market, or the poorer shoots are allowed to grow until they become covered with eggs. They are then cut and destroyed, and in this easy manner the first brood of larva is reduced to a minimum. If farmers could be induced to destroy the volunteer asparagus growing along the road and in fence corners, the practice would be still more effective, but as it is, hundreds of eggs are allowed to develop in these neglected places and the new beetles find their way to the cultivated plants after the cutting season is over.

Farm practice to prevent insect injury is bound to become a subject of great importance in the near future. Poisons and insecticides generally, will always have a large field of usefulness, but we can often control insects easily and cheaply by taking advantage of some peculiarity of habit. I have called attention to some of the possibilities of this method in Bulletin No. 85 of the New Jersey Station, and further observations bring new applications of the principle. In Bulletin No. 21 of the Mississippi Experiment Station, Mr. H. E. Weed gives an account of the insects injurious to cabbage. All of the species treated are well known, and have been frequently written up, but the new and valuable facts are in the account of the "Harlequin Cabbage Bug," *Murgantia histrionica.* Mr. Weed has found that the hibernating bugs are especially fond of radish and mustard plants, and that they feed and oviposit on these in preference to the cabbage. By planting trap rows of mustard or radish in the cabbage fields the bugs are induced to congregate on them, and there they can be easily collected and destroyed, or kerosene can be used as a spray, thus destroying the insects. Kerosene when diluted so as to be safe for use on cabbage, is ineffective as against the adult bugs and their destruction on cabbage is thus out of question. The mustard or radish would be planted merely to be sacrificed in destroying the insects. In New Jersey the wild Cruciferæ are an important element in the life of our most serious cabbage pest—*Pieris rapæ*. It is upon these that the few spring butterflies lay their eggs, and upon these the larvæ develop before the cabbages are in condition to afford food for them. A conscientious early destruction of cruciferous weeds, would very materially lessen injury from "cabbage worms" later in the season.

Dr. E. W. Doran has a Bulletin on "Wheat Insects," No. 16 of the Maryland Agricultural Experiment Station. The insects treated are those that affect the stored grain, and the most important of them is the "Angumois Grain Moth," *Gelechia cereallela* Oliv. Dr. Doran made a number of experiments for the purpose of determining the degree of heat and length of the time necessary to destroy the insects, but obtained negative results only. Unfortunately, he does not seem to have tried duplicating the results obtained by Mr. F. M. Webster, which are referred to in the account. Naphthaline has proved satisfactory on experiment, and Dr. Doran recommends its use in bins of stored grain as a repellant. He says it also kills the moths in an air-tight vessel, but says nothing of its effects on the larvæ. A rather curious and interesting note is found in the account of the "Red Grain Beetle," *Silvanus cassiæ*. Not only were the insects excessively numerous in a bin of wheat middlings, but in that part in which they were most numerous the temperature of the material rose at one time to 95° F., a difference of 53° as compared with the temperature of the room and of other less infested parts of the grain.

Concerning the Carbon disulphide, a little experience of my own may prove of some interest. In the little patch of sod constituting my "front yard," a colony of large black ants had established themselves, and this year their nest or hill became too conspicuous to suit my views. The disc of loose soil was nearly two feet in diameter, while openings were found six inches to each side of that, making the space covered about three feet in diameter. On this space the grass began to die, and the great number of insects became annoying. To get rid of them I used a one pound bottle of Carbon disulphide, simply pouring it into the holes and then treading down the soil over the space occupied. I expected that, as a matter of course, the grass roots would be destroyed by this treatment, and that I would be compelled to re-sod. As against the ants, the substance was completely effective, no further trace of them being observed; but instead of losing my grass, it took a new start, growing rank and vigorous, and, while all around it was dry and parched by drought, this little patch remained bright and green, growing vigorously! It may be that the liquid sank into the loose soil so rapidly and deeply that the grass roots were not affected, and that the looseness of the soil proved an advantage to the grass on it, enabling it to better resist the dry weather; but whatever the explanation, such were the facts.

In Volume I, No. 1, p. 39, of the Kansas University Quarterly, Mr. V. L. Kellogg describes the early stages of *Melitara dentata* Grt. bred from the leaves of the prickly pear cactus, *Opuntia missouriensis* in Colorado, and finds the habits of the species very like those of *M. prodenialis* Wlk. described by Dr. Riley and myself. Among other matters he gives a description of the egg, which is said to be creamy-white in color; but he does not say where the eggs were found, nor how they are laid. Mr. H. G. Hubbard, in the course of a conversation in which the eastern species was mentioned, informed me that he has observed the eggs, and that they are set, one on top of the other, in such a way as to resemble exactly one of the spines or prickles of the plant. This is quite a remarkable instance of mimicry; the more as it is not the egg itself which is mimetic, but rather the arrangement by the parent moth, in which the individual appearance of the ova is lost in the impression created by the mass. It is quite probable that the western species will be found to have similar habits.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**To Contributors.**—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

Dr. R. OTTOLENGUI, of New York, had a very successful collecting trip to Mt. Washington, N. H.

Mrs. A. T. SLOSSON has, as usual, been collecting among the Northern Hills, at Franconia Notch, N. H.

Mr. PHILIP LAURENT and Dr. Henry Skinner spent two weeks collecting in Mitchell County, North Carolina.

Mr. I. C. MARTINDALE has recently been elected a member of the Entomological Society "Iris" in Dresden.

Mr. FRANK M. JONES, of Wilmington, Del., spent two weeks collecting in Richmond County, southern North Carolina.

WE have learned that Dr. H. Strecker, of Reading, has entirely rearranged his immense collection of Lepidoptera, and that it is now something magnificent.

Mr. PHILIP NELL and Mr. C. W. Johnson have been trying to make insects scarce in southern New Jersey. Mr. Nell discovered a very interesting locality for *Pamphilus leonardus* at Atco, where the species was found in abundance.

HAVING read the article in the April number of the NEWS on peach yellows and rosette, by W. H. Patton, I would like to ask if this gentleman is correct, why is the government at Washington spending so much time and money in trying to find the *cause* of peach yellows, as well as a remedy? It seems to me the above article should be corrected in order to avoid mistakes, or else the government ought to be notified of this great discovery.—G. R. PILATE, Griffin, Ga.

SOME time ago I read an account of the different classes of insects representing the different kind of governments, viz.: Ants representing Democratic or Republican; Bees, the Monarchial; and Butterflies the Anarchistic, etc., with the different explanations. Could you please let me know or publish where I could have seen it?—EUGENE R. FISCHER, No. 2707 Winnebago St., St. Louis, Mo.

WE know of no such article. If any reader of the NEWS can supply the information Mr. Fischer desires, no doubt he would be grateful.—ED.

ON July 3, 1892, the Entomological Society of Belgium tendered a banquet to the veteran entomologist, the Baron Edmond de Selys-Longchamps, on the occasion of the fiftieth anniversary of the publication of "La Faune de la Belgique," to which M. de Selys had contributed. M. Giron delivered a congratulatory address to the honored guest, referring to the chief events, scientific and political, of the latter's life. Baron de Selys is one of the oldest of living entomologists, having been born in Paris, May 25, 1813. The long and continuous list of his entomological publications begins with 1831, and extends into the present year.

THE steamer "Kite" (September 19th) is on its way from Greenland to Philadelphia, bringing the members of the Peary Expedition and also the Academy Relief Expedition. It is stated that rich collections have been made of the flora, fauna and ethnology of North Greenland. It made almost a complete collection of water and land mammals, both in skins and skeletons; a large variety of birds and submarine animal life, a rare collection of flowering plants, mosses, lichens and insects, and of ethnological specimens. These collections become the property of the Academy of Natural Sciences of Philadelphia, and the Entomological Section will come into possession of the insects.

IN the preface to the just published first volume of his Catalogue of Lepidoptera-Heterocera, referred to in our Literature Department, Mr. W. F. Kirby says: "The MS. of the whole of the remainder of the present work has been in an advanced state for some years, and it is proposed to issue it as follows: 'Vol. I. Sphinges and Bombyces (now published); Vol. II. Noctuæ; Vol. III. Geometræ and Pyrales; Vol. IV. Micro-Lepidoptera; Vol. V. Appendix, to date, and complete indices of both generic and specific names to the whole. The first four volumes will contain only an Index of Genera. It is perhaps only right to add that the possibility of completing the work must in part depend on the support accorded by entomologists to the successive volumes as they appear.'" The evident value of such catalogues will undoubtedly influence American entomologists to contribute their share of that support to which Mr. Kirby refers.

CHOLERA AND FLIES.—It may not be amiss to call the attention of the public to the great danger from house flies as agents in spreading the contagion should there be an epidemic of cholera. I have repeatedly observed that these insects will ride for a number of miles on street cars, and doubtless also upon other vehicles of transit, such as railway coaches, etc., though I have never made observations upon any conveyances but the ordinary tram or horse car. Suppose a case: imagine a cholera victim upon the street or anywhere else vomiting; the flies present are attracted and drink until sated, and have their feet and mouth parts wetted with the vomit containing the germs. They then, perhaps, fly out into the street, take a place on a horse car, ride several miles, dismount, fly into another house, where the family are at dinner, and contaminate the food set before them with the germs of the cholera carried on the mouth parts and feet of the insects. Some of the family sicken and die, yet no one of them will ever, perhaps, suspect that the flies may have carried the germs, as supposed above, for miles from some other case. The safeguards are to at once clear away, disinfect with corrosive sublimate solution and scald the spots where the vomit has been thrown, and to be vigilant in the use of fly-screens, fly-traps, etc. During the late war the late Professor Leidy pointed out, with beneficent results, that the common house-fly was instrumental in spreading the contagion of hospital gangrene. Why not beware of this imprudent and ubiquitous little dipter in carrying and spreading the contagion of the dreaded Asiatic plague now menacing us?—JOHN A. RYDER, *in Public Ledger.*

GUNNING FOR BUTTERFLIES.—All, no doubt, are familiar with the usual methods and paraphernalia wherewith butterflies are captured and preserved; the man with the gauze net, poison bottle, cork-lined box, folded paper envelopes, wire pins and sundries *ad libitum*, long ago ceased to be a curiosity in civilized lands. But there are some unusual methods and implements, a description of which will be likely to prove of interest. Prominent among them is gunning for butterflies, an expedient that is most useful where tropic vegetation induces high flight, and renders by means of its density all chance for pursuit impossible. For this a small bore gun or rifle is best, and dust-shot, such as is used by the humming-bird hunters on the Amazon, or a water load is best. Any shot coarser than dust-shot will prove too heavy and will ruin the specimen for sale by tearing the wings. A gun that will scatter the dust widely should be selected, and even then a few shot bunched may tear off a head or an abdomen and ruin the prize. My own preference is for a rifle firing a 32-calibre, long cartridge, loaded with water. These cartridges can be obtained with an extra heavy charge of powder and without the ball in them. Before loading they should be smeared inside with melted paraffine applied with a camel's-hair brush; this prevents the water load from moistening the powder. But even with this precaution it is best to load only so many shells as are likely to be used during the day, and the water should be emptied from those that are left over at night. After filling the shell with water up to within a thirty-second of an inch from the rim, a tight-fitting, oiled wad can be forced down and a light coat of paraffine be applied on top with the brush. I have tried water thickened with starch, with gum arabic, and with gum tragacanth, but I have never been able to see that anything has been gained by thus rendering the charge somewhat more self-adherent. The water load is much more sure to bring yonr prize "to grass," and is not nearly so liable to tear and denude the wings. The dust-shot will often cause a large specimen to deflect its course, and by unmistakable signs show that it has been hit, yet will not bring it down.—*Goldthwaite's Geographical Magazine.*

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

## Entomological Literature.

ZOOLOGISCHER ANZEIGER, No. 394.—On the larva of *Lagoa*, a Bombycine caterpillar with seven pairs of abdominal legs; with notes on its metameric glandular abdominal processes, Alpheus S. Packard. On ants in thorns of African Acacias, Prof. E. Emery.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, 4e An. No. 10, July, 1892. —Memoir on some *Acarina* and *Thysanura*, parasites or mess-mates of ants, R. Moniez.

CANADIAN ENTOMOLOGIST, July, 1892.—Notes on Coleoptera, John Hamilton. A new species of *Eudamus* H. Skinner. Notes on North American Tachinidæ, with descriptions of new genera and species, C. H. T. Townsend. Insects attracted by fragrance or brilliancy of flowers for cross-fertilization, R. E. Kunze. New North American Microlepidoptera, C. H. Fernald. New forms of *Ichthyura*, H. G. Dyar.—August, 1892. The first or post-embryonic stage of the pea and bean weevils, C. V. Riley. Some notes on the margined soldier beetle (*Chauliognathus marginatus*), C. V. Riley. The species of *Mamestra*, A. R. Grote. Mr. Walker's types, A. R. Grote. Ovipositing of *Melitea chalcedon* in paper envelopes, R. E. Kunze, M.D. Lepidoptera from Marshall Pass, Colorado, T. D. A. Cockerell. Biologic notes on New Mexico insects, C. H. T. Townsend. A list of the butterflies found at Marshall, Mo., and vicinity, Owen J. Staley.—September. Presidential address, Entomological Club, A. A. A. S., E. A. Schwarz. Some beautiful new Bombycids from the west and northwest, B. Neumoegen. Preparatory stages of *Catocala stretchii* Behr., G. H. French. Synopsis of the North American species of *Astatus*, W. J. Fox.

TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1892, Pt. 2.—Additions to the Longicornia of Mexico and Central America, with remarks on some of the previously recorded species, by the late H. W. Bates (74 n. sp. and 6 new genera).

NEW MEXICO AGRICULTURAL EXPERIMENT STATION, Bulletin No. 7, 1892.—Scale insects in New Mexico, C. H. T. Townsend.

THE KANSAS UNIVERSITY QUARTERLY, I, 1, 1892.—Notes and descriptions of Syrphidæ, W. A. Snow. Notes on *Melitera dentata* Grt., V. L. Kellogg. Diptera Brasiliana, pt. 2, S. W. Williston.

SOUTH DAKOTA AGRICULTURAL COLLEGE EXPERIMENT STATION, Bulletin No. 30.—Parasites of the large willow saw-fly; bee keeping; soapsuds for cabbage lice, I. H. Orcutt, J. M. Aldrich.

MARYLAND AGRICULTURAL EXPERIMENT STATION Bulletin No. 16.—Insects injurious to the grain of wheat, E. W. Doran.

PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, vol. ii, No. 2.—The insect collections in the Berlin Museum. Notes on the genus *Melittobia*, W. H. Ashmead. Mimicry in spiders. A new genus of Phalangiidæ. On *Prodidomus rufus* Hentz, Nathan Banks. Notes on the food habits of some species of Chrysomelidæ, F. H. Chittenden. The ravages of *Liparis monacha* in Germany, and means of defense and results of work against *Liparis monacha* in Europe, B. E. Fernow. A list of spiders from Indiana, W. H. Fox. Note on the food-plants of some Capsidæ from vicinity of Washington, D. C., Otto Heidemann. Appearance of mealy bugs parasitized by *Leptomastix*. Habits of *Melittobia*, L. O. Howard. A study of the ovipositor in Hymenoptera, C. L. Marlatt. A list of the Aranæa of the District of Columbia. A contribution to the study of the spider fauna of the Arctic regions. Notes on the classification of the Ixodidæ. Contributions to the knowledge of the life-history of Arachnida, Geo. Marx. Peculiar habits of *Ammophila gryphus* Sm., T. Pergande. Notes on *Lema Sayi*, W. D. Richardson. Note on the life-habits of *Megilla maculata*. On the larva and some peculiarities of the cocoon of *Sphecius speciosus*, Mexican jumping bean. On the insects affecting the Agave. A probable microgaster parasite of *Eleodes* in the imago state. Our American ox warbles. Further note on *Carpocapsa saltitans* and on a new *Grapholitha* producing jumping beans. Fig insects in Mexico, C. V. Riley. Note on *Phytobius*. A correction. Food habits of *Halticini*. Verdigris in Coleoptera. Time of flight in Lachnosterna, E. A. Schwarz.

INSECT LIFE, Washington, D. C., vol. iv, Nos. 9 and 10.—Pea and bean weevils. The ox bot in the United States, C. V. Riley. Ravages of the leopard moth in Brooklyn, Nicholas Pike. How far do bees fly?, Frank Benton. Note on the water bug found by Rev. J. L. Zabriskie, E. Bergroth. Early published references to some of our injurious insects, F. M. Webster. Strange developments of Stomata on *Carya alba* caused by Phylloxera, D. A. Owen.—11 and 12, August, 1892.—Some interrelations of plants and insects, C. V. Riley, figs. A new *Icerya* parasite, L. O. Howard. The West Indian rufous scale (*Aspidiotus articulatus* Morgan), T. D. A. Cockerell. Life-history of *Calothysanis amaturaria* Walk., a Geometrid moth, A. S. Packard. Steps towards a revision of Chambers' Index, with notes and descriptions of new species, Lord Walsingham. Notes on *Lachnosterna*, G. H. Perkins.

THE ENTOMOLOGIST, August, 1892.—On the identification of *Attacus atlas* Linn. and its allies, with remarks on some other species of the genus, W. F. Kirby. Notes on the synonymy of Noctuid moths, A. G. Butler.

DIRECTIONS for collecting and preserving insects, C. V. Riley, being part of Bulletin of the U. S. National Museum, No. 39, pp. 149, illustrated.

JOURNAL OF THE LINNEAN SOCIETY 24, 149-50.—Catalogue of the described Hemiptera-Heteroptera and Homoptera of Ceylon, W. F. Kirby.

REVISION of the genus *Cucullia;* Revision of the Dicopinæ; Revision of *Xylomiges* and *Morrisonia*, John B. Smith, in Proc. U. S. National Museum, vol. xv, pp. 33-86.

THE ENTOMOLOGIST'S RECORD, August, 1892.—Protective resemblance, W. Farren. Fecundity of *Spilosoma lubricipeda*, Geo. Hollis. The ova state of Geometræ, C. Fenn.

LIST of types of some species of Lepidoptera, described by Grote and Robinson, in the American Museum of Natural History, Wm. Beutenmüller. Ext. Bull. Am. Mus. Nat. Hist., N. Y.

NOTES on the Transformations of some species of Lepidoptera, Henry Edwards and S. Lowell Elliott; edited with additions, by Wm. Beutenmüller. Ext. Bull. Am. Mus. Nat. Hist., N. Y.

SOME notes on transformations of Australian Lepidoptera made by the late Henry Edwards, with notes and additions, Wm. Beutenmüller. Ext. Bull. Am. Mus. Nat. Hist., N. Y.

ON the earlier stages of some species of North American moths, W. Beutenmüller. Ext. Bull. Am. Mus. Nat. Hist., N. Y.

BIOLOGIA CENTRALI-AMERICANA, Part 102, May, 1892.—Arachnida Araneidea, O. P. Cambridge, pp. 97-104. Coleoptera: vol. iv, pt. 2, G. C. Champion, pp. 393-400, pl. 18; vol. vii, H. S. Gorham, pp. 169-176. Lepidoptera-Heterocera: vol. ii, H. Druce, pp. 25-48, pl. 44. Diptera: vol. iii, S. W. Williston, pp. 73-89, pl. 2.—Pt. 103, July, 1892. Lepidoptera Heterocera, vol. ii, pp. 49-96, pls. xlv-xlviii, H. Druce.

OTTAWA NATURALIST, vol. vi, No. 4.—The fall web worm (*Hyphantria cunea*), J. Fletcher.

ANNALS AND MAGAZINE OF NATURAL HISTORY, ix, 54.—Descriptions of new genera and species of Pyralidæ contained in the British Museum collection, W. Warren.

LEPIDOPTERA INDICA by F. Moore. Pt. 10. Continues Satyrinæ; 7 colored plates.

A monograph of Oriental Cicadidæ by W. L. Distant. Pt. 5, pp. 97-120, 3 plates.*

REVISTA DEL MUSEO DE LA PLATA, ii, 1891.—Argentine Dipterology,* F. L. Arribalzaga, pp. 135-172, 5 plates.

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* Contains new species other than North American.

JOURNAL OF THE ROYAL MICROSCOPICAL SOCIETY, August, 1892.—Note on the process of oviposition as observed in a species of cattle tick, R. T. Lewis, 1 pl.

BULLETINO DELLA SOCIETA ENTOMOLOGICA ITALIANA xxiv, 1, Florence, June 30, 1892.—On glandular cells of post larval origin, E. Verson, 1 pl. Researches on some sense organs in the antennæ of ants, G. Sergi.

ENTOMOLOGISCHE NACHRICHTEN, Berlin, xviii, 12, June, 1892.—A noteworthy case of mimicry, K. M. Heller.—16, August, 1892. A fighting and sociable male bee, C. Verhoeff.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, v, 1 (Lepidopterologisches Heft), Juue, 1892.—On the family Siculidæ Guenée,* Dr. A. Pagenstecher, 1 pl. New species and varieties of palæarctic Geometridæ from my collection, Dr. O. Staudinger.

BULLETIN DE LA SOCIETE IMPERIALE DES NATURALISTES DE MOSCOU, 1891, 4; 1892.—Essay on a classification of the Sphegidæ in the Linnean sense, according to the structure of the copulatory armature, O. Radoszkowski, 5 plates.

U. S. DEPARTMENT OF AGRICULTURE, DIVISION OF ENTOMOLOGY, Bulletin No. 20.—Reports of observations and experiments in the practical work of the division, etc., Washington, 1892.

MEMOIRES SUR LES LEPIDOPTERES, REDIGES par N. M. Romanoff, Tome vi, pp. 700, 16 pl. col., St. Petersbourg, 1892.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xix, No. 2, Philadelphia, 1892.—Notes on North American Tachinidæ, *sens. str.*, with descriptions of new genera and species, III, C. H. T. Townsend. Preliminary notes on some African Odonata,* P. P. Calvert.

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BIOLOGISCHES CENTRALBLATT, ERLANGEN, September, 1892.—Contributions to the biology of the Phryganeidæ, Grafin Maria v. Linden.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxvi, 8, Brussels, August 6, 1892.—A special form of temporary colonies of *Coccinella septempunctata*, F. Plateau. Phytophaga of Chota Nagpore,* A. Duvivier.

MEMOIRES (of the same).—I. Synonymical catalogue of the Buprestidæ described from 1758 to 1890, C. Kerremans, pp. 304.

ZOE, III, 2, San Francisco, July, 1892.—Notes on the Tenebrionidæ observed in San Diego County, F. E. Blaisdell. Insects affecting Yucca blooms, C. H. T. Townsend.

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* Contains new species other than North American.

A Synonymic Catalogue of Lepidoptera Heterocera (Moths), by W. F. Kirby. Vol. i, Sphinges and Bombyces. London: Gurney & Jackson, 1892, pp. xii, 951. Containing the full synonymy of every species described up to May, 1892, and a complete alphabetical index of genera. Price, £2 2s. nett.

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## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### LEPIDOPTERA.

*Cucullia similaris*, *C. obscurior*, *C. dorsalis*, *C. bistriga*, *C. cinderella*, *Eulolype bombyciformis*, *Copipanolis borealis*, *C. fasciata*, *Xylomiges perilalis*, *X. ochracea* J. B. Smith, Proc. U. S. National Museum, vol. xv, pp. 33–86.

*Grapholitha sebastianiæ* Riley, Proc. Ent. Soc. Washington, ii, 2, p. 214.

*Eudamus coyote* Skinner, Can. Ent. July, 1892, p. 164, Texas.

*Ichthyura multnoma*, *I. albosigma* var. *specifica* Dyar, Can. Ent. July, 1892, p. 179.

*Heliodines tripunctella* p. 384, *H. sexpunctella*, *H. unipunctella*, Walsingham. Insect Life, iv, p. 385, 1892.

*Aegeria rubristigma* Kellicott, Can. Ent. xxiv, p. 211, Ohio.

Bombycidæ: *Melia* n. g. Neumoegen, Can. Ent. xxiv, p. 225; *M. danbyi* id., Brit. Col. *Hyparpax venus*, p. 226, Col. *Notodonta deschorei* p. 227, Brit. Col. *Halesidota sanguivenosa*, p. 228, B. C.

New species of Heterocera from Mexico and Central America, Druce, Biol. Cent. Am. Lepid.-Heter., ii, pp. 49–96.

### HYMENOPTERA.

*Cerchysius iceryæ* L. O. Howard, Insect Life, iv, 11 and 12, p. 379, 1892.

*Astatus pygidialis* Fox, Can. Ent. xxiv, p. 234, N. J., Tex.

### ARANEINA.

*Datames caspari* Marx, Proc. Ent. Soc. Washington, ii, 2, p. 254, Mex.

*Caddo* n. g. Phalangidæ. *Caddo agilis* Banks, Proc. Ent Soc. Wash., ii, 2, p. 249.

### DIPTERA.

*Callicera montensis*, *Melanostoma* n. sp.; *Syrphus ruficauda*, *Brachyopa cynops* Snow, Kansas University Quarterly, i, 1, p. 34, 1892. Eight new species of *Conops* Snow, Kansas Univ. Quarterly, i, 1, p. 43.

New genera and species of North American Tachinidæ, Townsend, Can. Ent. July, 1892, p. 165.

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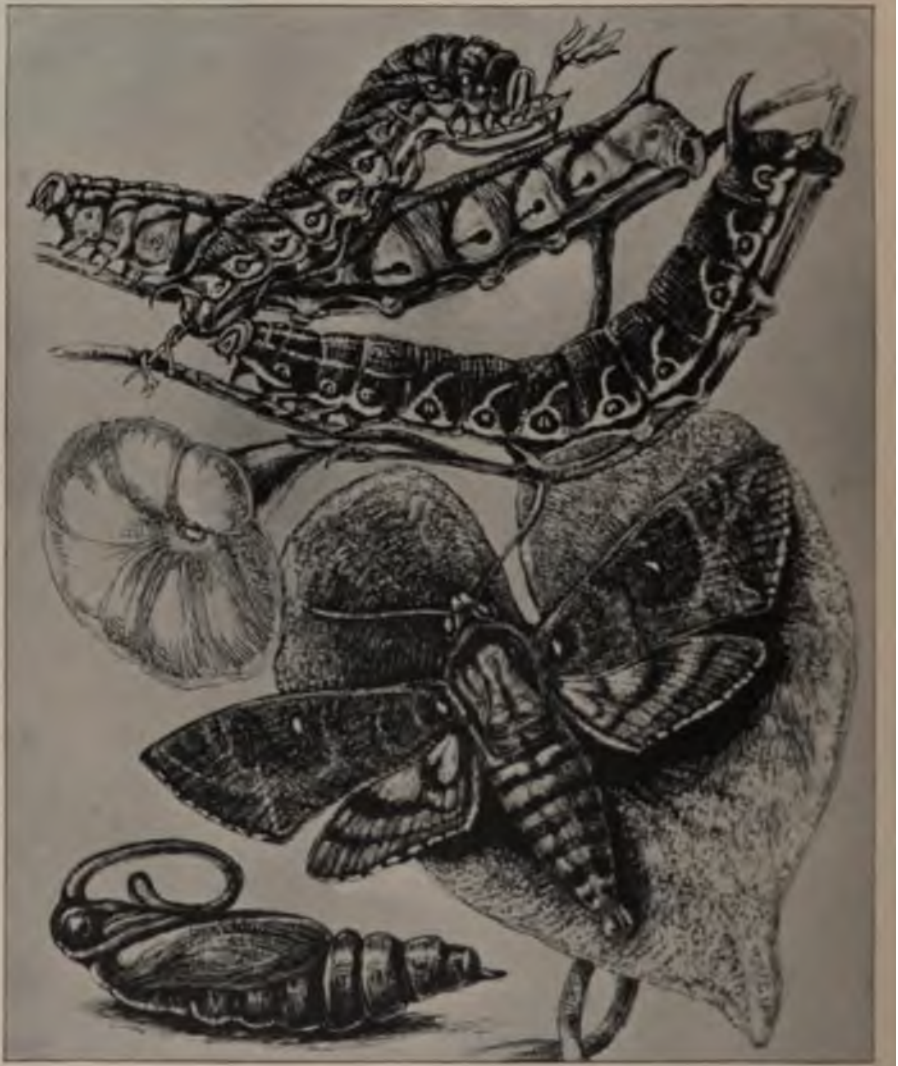
ENTOMOLOGICAL NEWS for September, was mailed August 31, 1892.



PROTOPARCE (SPHINX) CINGULATA Fab.

# ENTOMOLOGICAL NEWS

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. NOVEMBER, 1892. No. 9.

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**OUR plate** illustrates the larva, chrysalis and imago of *Protoparce cingulata* Fab. The original drawing was made from life **by the late** T. R. Peale. This moth expands a little over four **inches.** It is readily recognized by the lateral rows of dark pink **spots on the** abdomen and the pink color on the inferior wings.

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## LARVA HUNTING IN WINTER.

By RICHARD E. KUNZE, M.D., New York.

(Continued from page 197, Vol. III, No. 8.)

February 14th had another larvæ hunt in the Cat-tail Flags of our suburbs on the Harlem River flats. Mr. J. Mohns accompanied me and about three dozen larvæ were found. In some stems of *Typha latifolia* we found both the empty pupa-case of a brood, as well as the full grown larva of the second as I am led to believe. In three or four different stems we found evidence of such. In quite a number of instances found two larvæ in one stem. In the "American Naturalist" for 1883, the statement is made by Dr. C. V. Riley that there is one annual brood of *Arzama obliquata*, whereas Dr. Kellicott found two such in one season.

February 28th I went over to Long Island on a biting cold day for the last hunt of the season. The ground of the swamp was frozen over solid in all but well-protected parts. Mr. L. Kohl went with me, a staunch collector 'midst snow squalls, of which we had several and equally tireless when surrounded by clouds of mosquitoes. We found sixty larvæ, of which we unconsciously slaughtered about eighteen in the following manner. The spot selected is very miry and surrounded by shrubbery, but inaccessible, except on coldest days of year. There we struck a bonanza. We did not find many larvæ above frost line, and I suggested to my friend, who carried a mechanic's jack-knife, to cut reeds as far as possible below frozen parts. By so doing we found many more, but mutilated about every third larva discovered. There was from three to five inches of frozen muck, through which we could not cut, and in this layer of frigid soil found two-thirds of all specimens. The stems were frozen solid below water-line and a thin coating of ice surrounded the Winter quarters of the larvæ. The interstitial part of stalks below frost line surrounding galleries was filled with icy particles and hard to cut. I found repeatedly both larvæ and empty pupa-cases in one and the same stem, thus verifying Dr. Kellicott's statement that *A. obliquata* is double-brooded.

At the end of the first week in May, some of these larvæ transformed into pupæ; others had turned black in color previous to such transformation. I kept each larva in a section of the *Typha* stem, placed into a jar containing damp moss. A few that ventured out of their Winter quarters and buried in the moss, died during a cold snap subsequently. Of others I had on previous occasions collected later in April, after cessation of heavy frosts, none died with me, although the larvæ were removed from the stems when found and placed into damp moss until the last two transformations were completed.

———o———

## ON ARGYNNIS ASTARTE Doub.-Hew. AND OTHER MATTERS.

By Dr. HERMAN STRECKER, Reading, Pa.

*Argynnis astarte* Doub.-Hew. ("Genera Diurnal Lepidoptera," t. 23, fig. 5), which has only been known, since its discovery in 1848, by one of Lord Derby's collectors in British Columbia, by the type in the British Museum, and the figure above cited, has recently been rediscovered by Mr. Thomas E. Bean, who took examples of both sexes in the Rocky Mountains on the Canadian Pacific Railroad, in the Province of Alberta; from one of these, a ♂, Mr. W. H. Edwards described his *Argynnis victoria* in "Can. Ent." vol. xxiii, p. 198.

The figure of Doub.-Hew. represents the upper side of apparently the ♀, and has been a puzzle to Lepidopterists as to what it could be. It comes nearer to the European *Hecate* and *Ino*, though exceeding them in size, than to any American species. The rediscovery of this remarkable insect is of the greatest interest. Mr. Bean, to whom I am indebted for my example, states that it is very rare, the Summer being so short in the region in which it occurs that some seasons it does not appear at all, there not being time sufficient, save under certain favorable circumstances, between the two Winters for it to develop and go through all the stages.

The literature regarding *astarte* is meagre; there is no description in the "Gen. Diur. Lep." merely the figure.

In "Proc. Ent. Soc. Phil." i, p. 221, W. H. Edwards confounds it with a form or species later described by myself as *Argynnis arge* in "Syn. Cat. Macrolep." p. 114, No. 210.

In "Proc. Ent. Soc. Phil." iii, p. 435, the same author in "Notes on the Argynnides of California" has "No. 4. Arg. astarte Doubleday. *Egleis*, Boisduval in lit. This species Dr. Behr subsequently called *Montivago*, a name which he transfers to the following:

I have the example "No. 4" which Dr. Behr sent me long since, with the types of all his Argynnidæ published in the "Jour. of the Lyc. Nat. Hist. of San Francisco," which is the original of the description of *Argynnis arge* above alluded to.

In "Trans. Ent. Soc." London, 1889, part iv, pp. 535–575, is "A Revision of the Genus Argynnis," by Henry J. Elwes, which is the best thing by far yet published on the Argynnidæ generally; the author states the type is in the British Museum, that it was discovered many years ago in British Columbia, probably in the Cascade Mountains, that it seems to have been overlooked in both Strecker's and Edwards' Catalogues, probably because the locality is incorrectly given in Kirby's as Jamaica; further, that it is distinct from any North American specimens and most nearly allied to *Amphilochus*.

Everything pertaining to the Argynnides is of interest, from an example of *Argynnis hanningtoni*, a species described by H. J. Elwes in foregoing paper p. 558, from Mt. Kilimanjaro, East Africa, I find it is closely allied to the Chilian *Argynnis lathonioides* and *modesta*, and that its position in the general collection would doubtless be between those species and *Argynnis lathonia*, the only European species to which it has any affinity.

Recently in "Science" there appeared a few lines on the nomenclature question, in which Prof. G. H. French upholds the useing of a capital in commencing the specific name of an insect. There is nothing particularly new in this course. Herbst and Jablonsky adopted it in "Natursyst. der Insecten," 1783–1804; Hübner, in "Verz. bek. Schmett." 1816; Boisduval, in "Spec. Gen. Lep." 1836; Horsfield, in "Descrip. Cat. Lep." 1828–29; Hewitson, in "Exot. Butt." 1856–76; Trimen, in "Rhop. Afr. Austr." 1862; the Felders in their various works, also Möschler, Staudinger in his great classical work, the "Cat. Lep. Eur. Faun."

From childhood I never dreamed of doing otherwise, and always adhered to it in my writings when the "Lep. Rhop.-Het." and "Syn. Cat. Macrolep." were published. I was adversely criticised on this point with few exceptions by the American lepidopterists, but later others have pursued the same course, and it is becoming now as general in this country as it has long been in Europe.

———o———

## ELEMENTARY ENTOMOLOGY.

### LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

The Liparidæ or Dasychiræ, as they are called in Mr. Grote's lists contain divergent material, our American forms considered. *Orgyia* and *Lagoa* have venation of entirely different types and must be separated into distinct families. *Lagoa* is very much more nearly related to the Limacodidæ than to *Orgyia*. Excluding *Lagoa*, and perhaps *Carama*, which I have not at hand for examination at present, the Liparidæ contain broad winged forms with retracted head, short palpi, rudimentary tongue and broadly pectinated male antennæ. In the primaries there is one, in the secondaries there are two internal or free veins, not forked at base; veins 3, 4 and 5, in both wings, are rather close together, 5 not nearly approaching the middle line between 4 and 6. In all the specimens examined by me, there is a distinct accessory cell in the primaries. In the genus *Orgyia* the female is wingless, with feebly developed head and thorax, but enormously distended abdomen. She never moves from the cocoon inclosing the pupa from which she has emerged, and the eggs are laid in a white mass on its surface. In the other American genera the females have developed wings and are larger than the males. The caterpillar of *O. leucostigma*, distressingly common in many eastern cities, will serve as a fair type of the larva of this family, excluding, as before, *Lagoa* and its more immediate allies.

In *Lagoa*, for which Dr. Packard has suggested the term *Lagoidæ*, we have, as has been indicated, an approach to the *Limacodid*, or more typical *Bombyx* type, whereas *Orgyia* approaches the Noctuidæ very closely indeed—so closely that it would be almost impossible to distinguish some broad winged noctuids by venation alone. *Lagoa* has a much heavier body with comparatively smaller wings than *Orgyia;* the vestiture is more loose and divergent, and the species have a "fluffy" appearance. In the female there is a massive tuft of scaly hair at the tip of the abdomen, giving it a swollen, obtuse appearance. The primaries have one simple internal vein; 4 and 5 are rather close together from the end of the median vein, and 6 is from the middle of the cross-vein closing the cell. Numbers 7, 8 and 9 are from a single stalk arising with 10 from the end of the subcostal. The cross-vein closing the cell is inwardly angulated and sends in through it a very distinct fold, feebly dividing the cell. The secondaries have two free internal veins; 4, 5, 6 and 7 are from the end of the median cell, 4 and 7 at the lower and upper angles; while 5 and 6 are from the cross-vein at nearly equal distances from each other and from 4 and 7 respectively. From the middle of the cross-vein, a very distinct fold, rising to the dignity of a feeble vein, runs inwardly, dividing the median cell. There is no free costal vein, but just before the end of the cell the subcostal sends off a branch—vein 8—to the outer margin before the apex.

The Limacodidæ are moderate or small-sized forms, with usually rather plump bodies, retracted head, obsolete tongue and lengthily pectinated male antennæ. The vestiture in the typical genus is dense and hairy, rather than scaly, and the legs are also very densely clothed. The primaries have two free internal veins; 4 and 5 are rather close together from the end of the median; 6 is from near the middle of the cross-vein; 7, 8 and 9 are stalked, and from the same point with 10, at the end of the subcostal. A very distinct fold divides the median cell. The secondaries have two fairly distinct free, internal veins, and often a distinct additional fold. Vein 4 is from the end of the median and 5 is from the cross-vein, about as far from 4 as the latter is from 3; 6 and 7 are from a long stalk at the end of the subcostal, the costal arising out of the latter some little distance from base. A distinct fold divides the median cell.

The above description is drawn from a specimen of *Parasa*, and applies in all essentials to *Limacodes*, *Phobetron*, *Isa*, *Packardia*, and probably also to all the other genera referred to the family. The characters are quite distinctive, and the family is as distinct in its larval characteristics. Almost all collectors who have collected caterpillars know the odd shaped, slug-like larvæ of the Limacodidæ, and if they have handled them with any freedom they have discovered in many of them very decided urticating properties. Most of these larvæ have no very distinct abdominal or prolegs, using the whole of the ventral surface for purposes of locomotion. They make a very dense, oval, or sometimes nearly globular, parchment-like cocoon, in which the larva usually rests without change through the Winter, pupating shortly before emerging as an adult in Summer.

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## A NEW PAMPHILA.

By Henry Skinner, M.D., Phila., Pa.

**Pamphila carolina** n. sp.—Male expands one inch. *Upperside:* Superiors fuscous, with three small subapical yellow spots, the uppermost one is very small in comparison with the other two. There are two yellow spots about the middle of the cell, which are almost coalesced. There is a row of four yellow spots extending across the wing from about its middle nearly to the interior margin. The inner third of the wing to the base is dusted with yellow scales. Inferiors immaculate (two specimens have traces of yellow spots). *Underside:* Superiors. The spots above are repeated, but are not nearly so well defined, and there is a distinct costal edging of brownish yellow. Inferiors brownish yellow, distinctly spotted with dark brown dots. The body above is concolorous with the wings. The antennæ are distinctly annulated, and the club beneath is entirly yellow, except the tip. Body and palpi below are same color as the wings.

The credit of turning up this new and interesting species is due to Mr. F. M. Jones, of Wilmington, Del. Mr. Jones says regarding the species: "They were captured about one-half mile south of Hamlet, Richmond County, North Carolina, on the border of a small cane-brake. They were not met with on flowers or in the grass, but sat on the leaves of the canes which bordered the road, and when alarmed flew with great swiftness. Two were taken August 23d, and the remaining two in the same locality several days earlier. This species does not seem closely allied to anything else, but will probably fall into the group containing *fusca*, *eufala*, *osyka*, etc. The spotted character of the underside of inferiors distinguishes this species from all others.

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## ENTOMOLOGIZING ON MOUNT WASHINGTON.—Part I.

By R. OTTOLENGUI, M.D.S., New York.

On the morning of August 5th I started from Jefferson, N. H., with my friend, Mr. Walter Perkins, of Manchester, en route for the summit of Mount Washington. The train left at 7.45, at which hour all the mountain tops were heavily clouded in. As the skies were clear in all other directions we hoped that old Sol would dissipate the mists ere we reached our destination. Besides, it was Friday, and every one knows that Friday is a lucky day upon which to start on an expedition. At least it has been so with me. By the time we left Fabyan's on the curious observation train that goes from there to the base, the weather was still more promising. The grade on this road is very steep, so that the train does not travel at lightning speed. I make this statement that my next may be believed. All along the road *Argynnis atlantis* were extremely numerous. At times as the train whirled by they rose in flight dozens in a group. This tempted me to try catching insects from a moving train. Leaning from the window with my net in readiness, I made a swoop upon the next group that arose and imprisoned five. I had the same experience last year, so that I can safely say the place for this insect is along the road from Fabyan's to the base. Other butterflies I noted, too, so that I have no doubt that a walk along the rails would be interesting to the collector.

Boarding the train for the summit, we started up Jacob's Ladder, seated upon the front platform, legs dangling, and eyes on the watch for any straggler that chanced within reach. I took insects in this way last season, but this year nothing came close enough, though *A. atlantis* and *V. milbertii* were numerous.

There be men, who, finding a good spot for collecting a special rarity, keep the knowledge well locked up in their secret souls for fear, perhaps, that others may go there and get a share of the good things. My main object in writing this is to tempt some other collectors into the charming region, and to describe accurately the most prolific hunting grounds, based upon two different season's experience.

Just before reaching the hotel the train stops at a water-station, possibly a quarter of a mile below. If the collector intends to return to the base the same day, he will have but three hours or thereabouts for work. He would best leave the train at this point rather than go to the summit and waste half an hour for dinner. Having his luncheon with him, he may eat it immediately. He should have his hunting cup, and can get water from a trough that leads pure brook water, icy cold, down to this point for the use of the workmen. This meal will not occupy more than ten minutes, when all is ready for the chase. I may now continue the story of my own expedition.

Leaving the water-station we worked our way southward, following the railroad till it turns for the final ascent, at which point we continued in a direct line, aiming to cross the carriage road, and descend the cliffs on the other side. We did this because we had learned that the heaviest winds seem to be on the north side of the mountain. The *C. semidea* is hard to see among the rocks, often resting flat upon their lichen-stained sides, which they closely resemble. When disturbed they start up, and, being feeble flyers, are readily wafted away by the winds, sometimes being carried out of sight, and seldom less than a hundred yards. One might follow a butterfly that distance across a smooth meadow, but would scarcely undertake it across Washington's rocks.

Crossing the carriage road, one finds a wall built up to mark the road in misty weather and keep the horses from plunging down the abyss. Climbing over this wall and descending from rock to rock, the winds are soon milder and the hunter is protected from them by the steep side of the mountain rising sheer above him.

On this trip we scarcely hoped to find many of the *semidea*, fearing that with July they ceased to exist. This idea was soon dissipated, for within half an hour we had taken about fifty. Suddenly a heavy cloud rolled down upon us, having approached the mountain from the north and topping its summit then extended downward towards the southern valley. At once my friend was lost to sight. We knew that it would be useless to hunt any longer in the face of the rising storm, and moreover, that it would be wise to get to the summit quickly. Exchanging our signal halloo frequently we started up. It is the easiest thing in the world to get lost in the mists of Mount Washington, for one crag is exactly like another, and only the oldest guides can recognize landmarks. But where we were we were safe, for we both knew that less than a hundred yards above was the carriage road, and that between us and it was a continual ascent. The rule was simple. Keep climbing up. Half-way down the mountain this would not hold, for paradoxical as it seems, ascent includes many a descent. One must climb up and down each spur, and they all look amazingly alike.

We reached the hotel in safety, and having determined to remain over night we went in to dinner. The rest of that day was spiritless and uninteresting as the mists grew thicker. Our hopes of hunting moths by light vanished in the impending gloom, consequently we retired at 7.30 to be ready for an early start if the morning should prove propitious.

At five we were up and watching the grandest sight that either of us had ever seen. After a night of storm the sun rose above the clouds and soon dissipated the upper stratum, so that with a bright dome of blue above we looked down upon a sea of clouds that shrouded in every mountain peak and all the valley in every direction. Stretched before us there seemed to be one long sea of ice, such as one imagines to exist in the Arctic regions.

At seven we started down the carriage road walking, and in search of *A. montinus*. Of this insect Dr. Scudder says: "Perhaps no collector has ever seen more than eight or ten in a whole day's scramble." At two miles and a half down the carriage road we reached the zone of dwarf pines, and also entered the clouds which we had admired all the morning. When amongst them so that they shut out the sun, our admiration dwindled. Up to this point we had taken scarcely any thing, being more bent upon reaching our destination than upon collecting. I did capture a single specimen of *Anarta schœnherri*, however, which pleased me, because I had seen so many, all of which eluded me. This little gray noctuid would start up from a rock by the way, and with rapid flight made more swift by the strong winds, would disappear almost before one realized that he had seen a "specimen."

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## Notes on a small Collection of Formicidæ from Jamaica, W. I.

By WILLIAM J. FOX, Phila., Pa.

The species enumerated herein were collected in Jamaica during April and part of May, 1891, by Mr. Charles W. Johnson, of the Wagner Free Institute of Philadelphia, and myself. Ants were exceedingly scarce during our visit, which accounts for the smallness of the collection. The discovery of a species new to science, among so few species, shows what a broad field there is to the student of these interesting insects in Jamaica. For the identification of the species my thanks are due to the distinguished myrmecologist, M. Ernest André.

1. *Camponotus fumidus* Rog. Common everywhere under stones and logs. 2. *Formica rufipes* Fab. Port Antonio, on flowers; common. 3. *Odontomachus hæmatodes* Linn. This species was common on the south side of the island in the vicinity of Kingston, but it disappeared entirely on the north side, at least in the Parish of Portland. 4. *Monomorium carbonarium* Sm. Common at Kingston, infesting houses. 5. *Pheidole fallax* Mayr. Common at Kingston; found elsewhere by us. This species seems to take the place of the common "pavement-ant" of the North, *Tetramorium cæspitum*, making its nests in precisely the same sort of places as that species. 6. *Cyphomyrmex reformis* Sm. Near Kingston; numerous specimens. 7. *Cyphomyrmex foxi* André, n. sp. Near Kingston; numerous specimens. 8. *Rhopalothrix simoni* Emery. Near Kingston; numerous specimens. A new locality for this species, which was described from Venezuela.

# ON THE SO-CALLED THROAT BOT.

By C. H. TYLER TOWNSEND, Las Cruces, N. Mex.

On May 15, 1892, I took a female *Gastrophilus* which was flying at the throat of my horse. The animal manifested unusual signs of uneasiness, and I noticed the fly alight several times, always exactly in the region ventrad of the first cervical vertebræ. This is the so-called throat bot (*Gastrophilus nasalis* Lin.) of whose habits but little seems to be certainly known in this country.

*G. nasalis* is easily distinguishable from *G. equi* by its clear wings, dark abdomen, and slightly smaller size. It is quite a pretty species, with rust-colored pile on the scutellum and on the the scutum on each side posteriorly.

Brauer says (Mon. Oestr. 60) that "according to Dr. Green *G. nasalis* deposits its white eggs in the region of the throat of the horse." The same author says of the larva (l. c. 89): "The larvæ live, according to Schwab, massed together [in Haufen gedrängt] in the duodenum of the horse near the pylorus [Pförtner], seldom in the stomach. They pass out with the excrement of their host and never hang fast to the sphincter internus." Nothing more is said by Brauer of oviposition or habits of larvæ.

Schiner (Fauna Austr. Dipt. i, 391–2) says that "the larvæ live in the intestines of the horse." He also records having bred specimens "from pupæ which were dropped in horse-dung."

Brauer says in his monograph that it was at that time not certainly known from America, but suggests *Gastrus subjacens* Walker from Nova Scotia as a synonym. This synonymy is confirmed by Osten Sacken (Cat.), who saw specimens in the British Museum. Beside the above-mentioned specimen from Las Cruces, N. Mex., I have two others from Kansas labeled "throat bot, Sept." Osten Sacken (Cat.) says that he has seen specimens from New York, Utah and Kansas.

The peculiarity of the habits of this species in flying always at the throat of the horse, with the apparent intention of oviposition, is not clear. If, like *G. equi*, the eggs are swallowed, why are they deposited in a place so inaccessible to the mouth of the horse? The animal certainly cannot get at them to swallow them himself, nor have I ever seen horses biting each other in this region of the neck. It would be absurd to suppose that the animal could rub his throat on his fore legs in any way so as finally to get the eggs into his mouth.

So far as I can determine, nothing is known regarding the method of entrance of the eggs or larvæ, into the intestine of the horse. Though I have not found the eggs, I am forced to believe, from the actions of the female fly, that they are actually deposited on the ventral surface of the throat. The habit seems explicable only on the supposition that the larvæ hatch where the egg is deposited, and, while young, burrow through into the œsophagus and are thus swallowed.

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ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., NOVEMBER, 1892.

THE NEWS FAMILY.—It may prove useful, as well as of interest, to the readers of the NEWS to know how the journal is managed, and who does the work. The editor has lately been receiving credit not his due, and desires to state to whom it is due for some of the work done for subscribers. The entire business management of the journal is conducted by Mr. E. T. Cresson, who also gives valuable assistance as a member of the Advisory Committee. The success of the Department of Literature is to be credited to Mr. P. P. Calvert, who devotes considerable time each month to this work, going over the literature that comes to the Academy and sifting out all that is of interest to the entomologist. Prof. John B. Smith is to be thanked for looking after the Economic Department. Mr. Charles Liebeck names all the Coleoptera sent to the Department of Identification of Insects, and when needed has the assistance and advice of Dr. Horn, who also looks over all the papers on Coleoptera. Mr. Chas. A. Blake, an honored member of the Advisory Committee, superintends the Mailing Department, and advises the printer when necessary. Mr. Calvert names all the Neuroptera sent to the Identification Department; Mr. C. W. Johnson the Diptera; and Mr. Wm. J. Fox looks after the Hymenoptera and remaining orders, except Lepidoptera. All these gentlemen do the work as a labor of love, and spend much valuable time on it.

NOTICE.—Those who wish to continue their subscriptions to ENTOMOLOGICAL NEWS for the coming year, will please indicate their desire to the Treasurer **before** January 1st next. **No change in price.** We trust that **all** will want to renew, and thus show their appreciation of the gratuitous work of those conducting the publication.

# DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

**Legislation against Injurious Insects.**—In "Garden and Forest," No. 240, for September 28, 1892, is a very timely editorial on "Legislation against Injurious Insects and Plant Diseases." The matter is already an important one, and is bound to grow more important as knowledge of preventive and remedial measures increases. It is discouraging to the intelligent agriculturist to find, that however well he follows directions and keeps down insect pests on his own land, year after year, he gets no *permanent* result, because his next door neighbor, who does not spray, supplies him annually with an overplus from his land. There is a manifest injustice in this. If the careless or ignorant farmer alone suffered from the consequences of his carelessness or ignorance, one might say "serves him right," but the trouble is, that insects have a habit of moving about, and where there are more than enough on one piece of land, they are no respecters of boundary lines, but cross over into the well-kept and well-cared for acres without hesitation. Where it is possible to poison the insects as they arrive, it simply imposes extra work and extra expense on the man who protects his crop; but sometimes, though an insect may be easily controlled, it cannot be reached until *after* the injury has been done.

A case in point is the red necked Blackberry Cane borer, *Agrilus ruficollis*. By cutting out the galls early in Spring, when trimming, and burning the cut wood, the entire brood of insects can be easily destroyed and future injury prevented. But, if a neighbor allows the insects to develop on his land, the beetles cannot be prevented from coming over and ovipositing in the canes of the clean patch. The beetles cannot be poisoned, for they feed very little. The larvæ cannot be reached, because they are internal feeders. Every infested cane means the loss of next year's crop from that cane, and the careful man is helpless. In an infested field, unless radical measures are taken, the crop becomes smaller each year, until it is no longer worth picking. Then it is often left another year, just to see whether it will do anything, and, finally, after all the insects have hatched the canes may be plowed out. I have seen in Atlantic County, New Jersey, early in September, acres of blackberries in which ninety per cent. of the canes were infested, and in some cases from ten to twelve galls were on a single cane. Such fields are plague spots, and should be dealt with as such. Too much legislation is not an unmitigated blessing, but some means of redress against ignorant carelessness is imperative.

**Caterpillars Injurious to Sugar Beets.**—Bulletin No. 24 of the Agricultural Experiment Station of Nebraska contains "Notes on certain Caterpillars Attacking Sugar Beets," by Lawrence Bruner. Mr. Bruner, in this Bulletin, mentions two species of *Eurycreon* as having appeared in injurious numbers. One of them is the well-known *E. similalis*, the other is —well, Mr. Bruner has, somehow, omitted giving a name to the other. This omission is supplied in a note by the editors of "Insect Life," vol. v, p. 55, where it is stated that it will probably prove to be *E.* (*Loxostege*) *sticticalis* Linn. A curious fact is, that the form heretofore unknown, has now appeared in the greatest abundance, and is the more injurious. Mr. Bruner gives a general resumé of the life-history of the species, a list of the more common food-plants, cultivated and wild, and suggestions as to remedial measures. Of these, among others, he says: "Other natural remedies can be brought to work against these insects' increase. The chief one of these is the keeping down of certain weeds upon which the caterpillars naturally feed." He then enumerates a number of these weeds, which enumeration need not be repeated here. The main point is in the recommendation to keep down weeds, and it is another proof of the importance of Farm practice to control insect injury, an example of which was also given in the last number of the News. Especially the Cruciferæ are noxious, because they nourish some of our most injurious species during the time the field crop is not available. Clean culture in the largest sense of that term is one of the most valuable measures at hand for the control of insect injury.

**The Corn Bill Bug, etc.**—Bulletin No. 18 of the Iowa Agricultural College Experiment Station, contains, among other things, "Reports on Injurious Insects," by Prof. Herbert Osborn and Mr. H. A. Gossard. The chief article is on the "Corn Bill Bugs," species of *Sphenophorus*, which have been injurious in Iowa during the past season. *S. ochreus* and *S. parvulus* were the troublesome species, while there is no mention of *S. sculptilis*, which has been the troublesome species in New Jersey for two or three years last past. Nothing new is added to either our knowledge of the life-history or of remedies.

Strawberry slugs were somewhat troublesome, and a short record of some experiments made against the larva of *Monostegia ignota* is given. The application of arsenites is recommended, even where the fruit is approaching maturity. From a sprayed plot—"Within a week after the application was made the assistant entomologist and other employés of the Department ate very heartily of the ripened fruit, with the intent of proving whether or not any ill effects would follow the freest use of the same. No injury, whatever, was experienced." All this premises a careful and intelligent use of the poison, and under such circumstances it can be used up to within a very few days of marketing fruit. Early in the season

I tried the experiment of eating heartily of currants which had been sprayed the day previously with a hellebore decoction made according to my directions. I am happy to say I felt not the slightest discomfort from the dose.

*Plutella cruciferarum* is also treated, and the arsenites are recommended.

**The abundance of Grasshoppers during the Season.**—In "Insect Life," vol. v, p. 57, the editors mention the abundance of grasshoppers in several eastern localities. In New Jersey there has also been an unusual abundance of Orthoptera, and especially in the southern parts of the State. Two days' collecting in Cape May County, early in September, was productive of a greater number of specimens and species than I had before taken in the State in any one year. Localities back of the shore, which, in ordinary seasons are swampy and inaccessible, were completely dried out in late Summer, and here the smaller Locustidæ abounded. *Acridium* was unusually abundant, four species being observed, two of them in great numbers. Of the cultivated crops, cranberries suffered more than others; late cabbages were badly injured in some localities, and other garden truck suffered to a less extent; field crops in general escaped.

The great abundance of these insects during the season has induced a somewhat careful study of them, the results of which will appear in a Station Bulletin some time during the month.

**A Mosquito Remedy.**—"An Experiment against Mosquitoes," is the title of an interesting paper read by Mr. L. O. Howard before the Association of Economic Entomologists at Rochester, and now published in "Insect Life" vol. v, p. 12. He finds that a very small quantity of kerosene on the surface of pools will suffice to kill all aquatic larvæ, including those of the mosquito, and will also kill the female mosquitoes attempting to oviposit. The length of time for which the kerosene remains active, is a matter of some surprise. Mr. Howard did not get the Lamborn prize for saying in the most round-about way that cultivating dragonflies would not answer to destroy mosquitoes, but he has done better, and has made an experiment, the practical value of which cannot yet be estimated. He has proved that under some circumstances it is quite possible to prevent breeding, by mosquitoes, and even to destroy the adults themselves.

**Peach Yellows.**—Mr. Patton's note on Peach Yellows, in the April number of the NEWS, is evidently based on a misconception, and on ignorance of the voluminous literature of the subject. The "Yellows" is undoubtedly a specific disease of an extremely obscure character, and in no way to be attributed to insect injury. Mr. Patton's note should never have been written.

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SUBSCRIBERS sending insects for identification will please put locality labels on their specimens.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

**[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]**

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**To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.**

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IN the September number of ENTOMOLOGICAL NEWS I find the following: "*Citheronia sepulcralis* is found from Pennsylvania southward." It may be interesting, therefore, for me to report that my friend, Mr. David W. Perkins, of Manchester, N. H., took four specimens of this moth in 1890 in that city, and again captured two this season. Of the six, two were females. They were taken in early morning resting on white houses near electric light poles.—R. OTTOLENGUI, New York.

THY. POWESHIEK.—Female caught and confined July 25th. Within two days twelve eggs were laid. The eggs are smooth, shiny, in color a light green. They are hemispherical in shape, with the edges of the base rounded. By the aid of a medium powered microscope a slight depression can be seen at the apex; size is about two-thirds that of egg of *P. manaataqua*. Larva hatched July 28th. Head of young larva is large, prominent, light brown in color. Body is light yellow sprinkled with a few scattering hairs. Hairs on thirteenth segment very prominent. On each side of the back is an irregular row of fine dark points. Each segment contains four. The two near the front of segment nearear together than those of the back.—HENRY G. WILLARD, Grinnell, Iowa.

VENTURESOME BUTTERFLIES.--During the present season I have been quite struck by the actions of two species of butterflies. The first, *Pyrameis atalanta* L. was observed to appear singly in the small, shady lawn in front of my house, usually about 4.30 to 5 P.M. Whether the same individual appeared each day, or whether there were several similarly inclined, I am unable to say, but only on one occasion did more than one individual appear on the same day. They, or it as the case may be, seemed to be entirely devoid of fear, flitting about, alighting sometimes on my shoulder, or often on my book as I sat reading. If driven off it would return, either to its former position on the back of my chair, or, more than once, alighting on the heads of my two little sons, aged seven and three years, as they were at play, much to their astonishment, and, in the case of the younger, consternation.

The other case was at Niagara Falls. Standing among the rocks, just beneath Prospect Point, I saw what, from the moment's observation I could give it, appeared to be *Pieris rapæ* hover for the moment in mid air then boldly dash forward and disappear in the mist and spray. I watched for several minutes to see if it would again emerge from its vapor bath, but watched in vain. It seemed to have deliberately committed suicide.—F. M. WEBSTER.

MIMICRY IN MOTHS.—Round about my house is a tangled shrubbery of stunted brushwood, with here and there a silver birch, young beech and Scotch fir, and in one corner stands an old outhouse, where a pipe is good at all seasons, says a writer in the "Nineteenth Century." It is half in ruins, and while there one day I noticed that the dingy old brown and gray wall was spotted with oddly-shaped blotches of a darker tint that looked like damp. That same evening, however, I found that the blotches had disappeared, though more rain had fallen and the roof was full of holes. The next day they had all come back. When this had happened a second time I looked more closely at the strange marks, and, to my surprise, I found them to be living creatures, small moths, in fact, with folded or outspread wings, clinging fast on to the crumbling wall. From dusk until dawn they had been out on the wing in the fields and woods—their chief enemies, the birds, being asleep—but at daybreak came back to their old place of safety. The shrubbery was dangerous because the ground was thickly covered with green ivy and still greener periwinkle and moss, where sparrows, finches and tits were always hunting for food, and they would have been soon snapped up. On the old weather-stained wall they were safe.—*Public Ledger.*

RAVAGES OF WHITE ANTS.—A statement by the British Vice Consul, Mr. Warburton, at La Rochelle, reminds us of the terrible ravages of the *Termites*, known as "white ants." It appears that many of the public buildings and private houses of La Rochelle are being destroyed by these pests. Introduced from some tropical land about a century ago, the ants had for a long time kept to a particular part of the town; but on the demolition of some of the houses there, the old wood was allowed to be carried away, and the insects are now found in every part of La Rochelle. In many buildings it is necessary to introduce iron supports, to save them from tumbling into ruins. Linnaeus spoke of these ants as "the great calamity of both the Indies." Wood is their favorite diet, and the only timber safe from them is teak wood (*Tectona grandis*) and iron wood (*Sideroxylum*). They tunnel through the vastest beams of buildings in every direction, leaving a thin layer untouched on the outside, and even coating the outside with clay to conceal their ravages in the interior. Humboldt says that in South America it is rare to find papers of any antiquity. In one night, everything left exposed, even boots and shoes, disappear. Ships are sometimes reduced to a condition sufficient to account for "foundering at sea" during a voyage. The "Albion" man-of-war had to be broken up, after reaching England with difficulty, by being lashed together. If they settle elsewhere in Europe, as they have done at La Rochelle, a new peril will be added to life and civilization.—*Leisure Hour.*

WE have received the following account of Prof. Townsend's entomological excursion during the past Summer: We left Last Cruces June 12th with four-horse team and covered government ambulance wagon. Crossing the Rio Grande at Rincon, we drove northwest through Cuchilla Negra, the length of the Cañada Alamosa, and on to Luera Spring. Here we turned west, crossed the Continental Divide, passed between the San Francisco and Datil ranges, and arrived in Springerville, Ariz., June 24th. From this place we drove north, followed down the Little Colorado River as far as the "San Francisco Wash," passing through Holbrook and Winslow on the way, and arrived in Flagstaff July 1st. By previous arrangement we were joined here by Prof. Toumey, of Tucson, and Mr. Cordley, of Washington, who had a similar outfit to our own, and together we proceeded to the Hance place on the rim of the Grand Cañon, seventy miles north of Flagstaff. Mr. Cordley and myself spent four days and nights down in the cañon collecting, about 4000 to 6600 feet below the rim. Returning, we spent two days collecting and climbing the San Francisco Mountain, the top of which is about 13,000 feet above sea level. We parted from Prof. Toumey and Mr. Cordley at Flagstaff, visited the petrified forest southwest of Navajo Springs, followed up the Zuni River, spent three days in the Pueblo, visited Inscription Rock, and returned by the Rio Grande Valley to Las Cruces, August 14th. The whole trip amounted to a drive of over 1200 miles. My companions were a fellow-professor and one of our students. About 1100 specimens of insects were collected by myself, representing nearly one-third that number of species. These were all pinned and labeled in the field. There was collected besides a considerable amount of alcoholic material and galls. I am preparing some papers on the results of the collecting in the Grand Cañon, and on the San Francisco Mountain, which will be published in due time.

It may interest you to know that the first scientific organization in New Mexico has just come into existence. It is known as "The New Mexico Society for the Advancement of Science," and will meet once a month in Las Cruces. The following officers have been elected for the remainder of the current year: President, C. H. Tyler Townsend; Vice-President, F. C. Barker; Recording Secretary, E. O. Wooton; Corresponding Secretary, Arthur Goss; Treasurer, H. D. Bowman; Members of Executive Committee, A. E. Blount and J. P. Owen. The Society hopes to publish an annual numero of its proceedings.—C. H. TYLER TOWNSEND.

A FLIGHT OF *Danais archippus* Fabr.—The *Cleveland* (Ohio) *Daily Press* of Sept. 21, 1892, states that on the 19th inst. in the afternoon, "a multitude of butterflies visited Cleveland on their way South. There were swarms upon swarms of them, and for a while they completely filled the air. They were of the large, brown variety, of the milkweed butterfly, and it is supposed that they were started by the storms in the East. Such migrations, though not unusual in the South and West, are very uncommon in this part of the country."

This species has been exceedingly abundant in northern Ohio, and I think in northern Indiana, this present season. At Wooster, Wayne Co., fifty miles S. S. W. of Cleveland, they were not universally abundant on the date indicated. The day was warm and pleasant, and, if I remember correctly, with little wind.—F. M. **Webster**, Wooster, O.

Transactions of the American Entomological Society, vol. xix (1892), pp. 129-256 inclusive, have been printed since our June issue, and contain the following papers: The N. American genera of Calyptrate Muscidæ, Paper II, by C. H. T. Townsend. The N. American genera of Nemocerous Diptera, by C. H. T. Townsend. Preliminary Notes on some African Odonata, by P. P. Calvert. On the Pselaphid genus Trimium, by E. Brendel. Revision of the species of Anthrax from America North of Mexico, by D. W. Coquillett. Descriptions of North American Harvest-Spiders (Phalangiidæ), by C. M. Weed, 7 plates. The Eumolpini of Boreal America, by G. H. Horn. Monograph of the N. American species of Tachytes, by W. J. Fox, 1 plate. A synopsis of the subfamilies and genera of the Membracidæ of N. America, by F. W. Goding.

## Identification of Insects (Imagos) for Subscribers.

**Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

Insects have been named for F. D. Twogood, A. A. Wright, Frank H. Johnson, A. G. Weeks, Jr., D. B. Young, Charles U. Clark, James S. Hine, W. T. Davis, M. V. Slingerland, J. H. Bomberger, C. H. Tyler Townsend, Henry Bird, C. M. Weed, George Miller, W. M. Hill, C. B. Aaron.

## Entomological Literature.

Annual Report of the Maine State College Agricultural Station, 1891.—Bangor, 1892. Pp. 187-207, Report of the Entomologist, F. L. Harvey.

The Entomologist's Record, London, Sept. 15, 1892.—The genus *Acronycta* and its allies (cont.), Dr. T. A. Chapman.

A Monograph of Oriental Cicadidæ by W. L. Distant. Published by order of the Trustees of the Indian Museum, Calcutta. London, Calcutta and Berlin. Pt. vi, pp. 121-144, 2 plates,* July, 1892.

ANNALS AND MAGAZINE OF NATURAL HISTORY (6), x, 57, London, September, 1892.—Spiders from Madeira,* C. Warburton, 1 pl. On *Eretmotus* and *Epiechinus* (Histeridæ),* G. Lewis, 1 pl.

MITTHEILUNGEN AUS DEM NATURHISTORISCHEN MUSEUM IN HAMBURG, ix, 2, 1892.—Hemiptera collected by Dr. F. Stuhlmann in East Africa,*† Dr. A. Gerstaecker.

LE NATURALISTE, Paris, Sept. 15, 1892.—The first stages of *Erebia melas*, P. Chretien. The parasitic fly of *Acridium peregrinum*, the wandering locust, M. Decaux. New nocturnal Lepidoptera,* P. Thierry-Mieg. The mouth and buccal organs of Arthropods, R. Saint-Loup.

IOWA AGRICULTURAL EXPERIMENT STATION.—Bulletin No. 18, Des Moines, Iowa, August, 1892. Reports on injurious insects, H. Osborn and H. A. Gossard.

AMERICAN NATURALIST, Philadelphia, October, 1892.—Habits of *Prenolepis imparis*, the Winter Ant, W. H. Patton. *Aphænogaster fulva* ♀, id. Chinch bugs in New Hampshire, C. M. Weed.

TIJDSCHRIFT VOOR ENTOMOLOGIE, xxxiv, 1-4, Hague, 1891.—Contribution to the beetle fauna of Madagascar,* C. Schaufuss. List of the Ants and Ant guests of Dutch Limburg, E. Wasmann. *Danais chrysippus* n. var., P. C. T. Snellen, 1 pl. Revision of the Rhaphididæ,* H. Albarda, 10 pls. (includes and figures N. American species). Some exotic Diptera,*† F. M. van der Wulp, 1 pl. On new or little-known Australian Longicornia,*† J. R. H. N. van de Poll. Lepidoptera from Flores,* P. C. T. Snellen. Contribution to the knowledge of the Indo-Australian Lepidopterous fauna,* J. Roeber. Catalogue of Dutch Hemiptera, v, A. J. F. Fokker.

PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, vi, 2-4, Sydney, 1891-92.—On Queensland and other Australian Lepidoptera,* T. P. Lucas. Notes on Australian Coleoptera, x,* Rev. T. Blackburn. Revision of the Australian Lepidoptera,* v, E. Meyrick.

TRANSACTIONS OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xv, 1, Adelaide, July, 1892.—New South Australian Lepidoptera,* O. B. Lower. New genera and species of Australian Coleoptera,*† Rev. T. Blackburn. The Phaneropteridæ of Australia and Polynesia,*† J. G. O. Tepper.

LEPIDOPTEREN VON MADAGASCAR,*† Herausgegeben von M. Saalmueller. Angefangen von dem Verfasser und nach dessen Tode abgeschlossen durch L. von Heyden. Zweite Abtheilung. Heterocera: Noctuæ, Geometræ, Microlepidoptera. Frankfurt a. M. Moritz Diesterweg, March, 1891, pp. 249-531; pls. vii-xiv.

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* Contains new species other than North American. † Contains new genera.

BULLETIN DE LA SOCIETE PHILOMATHIQUE DE PARIS (8), iv, 2, 1892.—Observations on the buccal pieces of Araneids, P. Gaubert.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1892, 2; August 1.—On stridulation in certain Lepidoptera, and on the distortion of the hind wings in the males of certain Ommatophorinæ, G. F. Hampson. On the Orthoptera of the Island of St. Vincent, West Indies,*† C. B. v, Wattenwyl and Prof. J. Redtenbacher, 3 pls. New species of Lepidoptera Heterocera from Brazil, Mexico and Peru, i, W. Schaus.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xix, Philadelphia, August, 1892.—Monograph of the North American species of *Tachytes*, W. J. Fox, 1 pl.

PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM, xv, pp. 361-369, Washington, D. C., 1892.—Insects of the subfamily Encyrtinæ with branched antennæ, L. O. Howard, 2 pls.

INSECT LIFE, v, 1, Washington, September, 1892.—Rose saw-flies in the United States, C. V. Riley, figs. An experiment against mosquitoes, L. O. Howard. Occurrence of *Bucculatrix canadensisella* Chamb. on birches in Rhode Island, A. S. Packard, figs. New injurious insects of a year, C. V. Riley. Notes on the larva of *Amphizoa*, H. G. Hubbard, figs. The Dipterous parasite of *Melanoplus devastator* in California, D. W. Coquillet. A new sweet potato saw-fly (*Schizocerus privatus* Norton), C. L. Marlatt, figs. On the nomenclature and on the oviposition of the bean weevil (*Bruchus obtectus* Say), Eds. Notes on the habits of some species of Coleoptera observed in San Diego County, California, F. E. Blaisdell. Biologic notes on New Mexico insects, C. H. T. Townsend. Further notes on the new Herbarium pest, C. V. Riley. The Australian enemies of the red and black scales, Eds.

CENTRAL EXPERIMENTAL FARM, Department of Agriculture, Ottawa, Canada, Bulletin No. 14, September, 1892.—The Horn Fly, J. Fletcher, figs.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, London, October, 1892.—*Elenchus tenuicornis* Kirby, parasitic on a Homopterus insect of the genus *Liburnia*, E. Saunders. Notes on *Elenchus tenuicornis* Kirby, with illustrations, Rev. A. E. Eaton, etc.

THE ENTOMOLOGIST, London, October, 1892.—Life-history of *Carterocephalus palæmon*, F. W. Frohawk, etc.

NATURE, London, Sept. 29, 1892.—*Peripatus* rediscovered in Jamaica, M. Grabham and T. D. A. Cockerell. *P. jamaicensis* n. sp., p. 514.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxvi, 9, Brussels, September, 1892.—Some ants of the Mediterranean fauna,* A. Forel. The male of *Cardiocondyla* and the perpetuated consanguinous reproduction, id.

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* Contains new species other than North American. † Contains new genera.

A Partial Catalogue of the Animals of Iowa represented in the collections of the Department of Zöology and Entomology of the Iowa Agricultural College. Prepared by Herbert Osborn. Ames, Iowa, 1892. Hymenoptera (three families), Lepidoptera, Coleoptera.

Proceedings of the Iowa Academy of Sciences for 1890-91, I, 2, Des Moines, 1892.—A new Cecidomid infesting Box Elder, C. P. Gillette. Egg-laying of the Apple Curculio (*Anthonomus quadrigibbus* Say), id. The gall-producing Cynipidæ of Iowa, id. On the Orthopterous fauna of Iowa, H. Osborn. Catalogue of the Hemiptera of Iowa, id.

Zoologischer Anzeiger, Leipsic, Sept. 26, 1892.—On the development of the eyes of the imago of *Vanessa*, H. Johansen. The physiological significance of the stinging apparatus, especially in the nymphs of Hymenoptera, C. Verhoeff.

Science, New York, Oct. 14, 1892.—Some thoughts on the phylogeny of the mole cricket, E. W. Doran. A wasp study, J. McN. Wright.

Viertelsjahrschift der Naturforschenden Gesellschaft in Zurich, xxxvii, 2, 1892.—Researches on the digestive tract of *Gryllotalpa vulgaris*, J. Eberli, figs.

Biologisches Centralblatt, Erlangen, Oct. 1, 1892.—On biology of wild bees, F. v. Wagner. The international relations of *Lomechusa strumosa*, E. Wasmann.

Zoologischer Anzeiger, Leipsic, Oct. 3, 1892.—New and little-known laws of the biology of Hymenoptera, C. Verhoeff.

The Annals and Magazine of Natural History, London, October, 1892.—Descriptions of some new species of African Lepidoptera, W. J. Holland. Description of a new genus and species of African moths, A. G. Butler. On the noctuid genera allied to *Hypætra* Guen., id. Revision of the noctuid genus *Melipotis* Hub., with descriptions of two new species, id. *Liphistius* and its bearing on the classification of spiders, R. I. Pocock.

Delaware College Agricultural Experiment Station, Bulletin No. xviii, Newark, Del., September, 1892.—The strawberry weevil (*Anthonomus musculus* Say), M. H. Beckwith, figs.

Canadian Entomologist, London, Ont., October, 1892.—Preparatory stages of *Calothysanis amaturaria*, D. S. Kellicott. Insects reared from galls on *Muhlenbergia mexicana*, F. M. Webster, fig. The elm leaf beetle (*Galeruca xanthomelæna* Schrank), J. B. Smith. The inhabitants of a fungus, H. G. Hubbard. The life-history of *Xenos*, id. Note on the species of *Acanthia*, H. Osborn. [The foregoing were read to the Entomological Club, A. A. A. S. at Rochester, Aug. 17-19, 1892.] New N. American Homoptera, E. P. Van Duzee.

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* Contains new species other than North American † Contains new genera

ARCHIVES ITALIENNES DE BIOLOGIE, xviii, 1, Turin, 1892.—Note on a series of new excretory organs discovered in *Bombyx mori*, E. Verson.

ENTOMOLOGISCHE NACHRICHTEN, xviii, 19, Berlin, October, 1892.—On the naming of varieties of palæarctic Cicindelas, H. Beuthin. On the development of *Hemerobius subnebulosus* St., and on the change of coloring in Neuroptera, C. Verhoeff.

VERHANDLUNGEN DER K. K. ZOOL.-BOT. GESELLSCHAFT IN WIEN, xlii, 3, September, 1892.—The ant fauna of Bulgaria with biological observations,* Dr. A. Forel, 1 pl. Alpine gall-flies, Dr. F. Thomas, 2 pls., figs.

## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### NEUROPTERA.

Rhaphididæ: *Rhaphidia assimilis* Albarda, Tijds. Ent. xxxiv, p. 144, pl. 8, fig. 23, Vancouver Is. *R. bicolor*, p. 152, pl. 9, fig. 24, Col. *Inocellia longicornis*, p. 169, pl. 11, fig. 32, Calif. *I. Hageni*, p. 171, pl. 11, fig. 33, Calif.

### HYMENOPTERA.

*Tachytes*, 9 n. sp., U. S., Fox, Trans. Am. Ent. Soc. xix, pp. 234–52.

Encyrtinæ: *Pentacnemus* n. gen. Howard, Proc. U. S. Nat. Mus. xv, p. 366. *P. bucculatricis*, Mo., p. 366, pl. xlvii, fig. 1. *Tetracladia* n. gen. p. 367. *T. texana*, Tex., p. 367, pl. xlvi, fig. 1. *Calocerinus* n. gen. p. 368, for *Tetracnemus floridanus*.

### DIPTERA.

*Sarcophaga opifera* Coquillett, Insect Life, v, p. 22, Cal.

*Cecidomyia negundinis* Gillette, Proc. Iowa Acad. Sci. I, p. 108, Iowa.

### HEMIPTERA-HOMOPTERA.

*Thamnotettix Smithi* Van Duzee, Can. Ent. xxiv, p. 266, N. J. *T. longiseta*, p. 266, Col. *T. Gilletti*, p. 267, Col. *T. montanus*, p. 268, Brit. Colum., Col.

## Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA. Meeting held May 26th, Dr. Horn, Director, presiding. The Publication Committee reported in favor of the publication of a paper entitled, "Preliminary Notes on some African Odonata," by P. P. Calvert. Mr. C. S. Welles stated that in the latter part of March, 1892, he had captured a specimen of *Grapta vau-album*, and saw another one a few days later on the edge of the woods, near his home at Elwyn, Pa. Mr. Martindale announced the capture of thirty-eight specimen of *Anthocharis genulia* by Dr. Skinner on May 9th, at Arcola, on the Perkiomen Creek. Dr. Horn exhibited a portion of his collection of the tribe Galerucini of the family Chrysomelidæ, and spoke of the work he had been doing on them.

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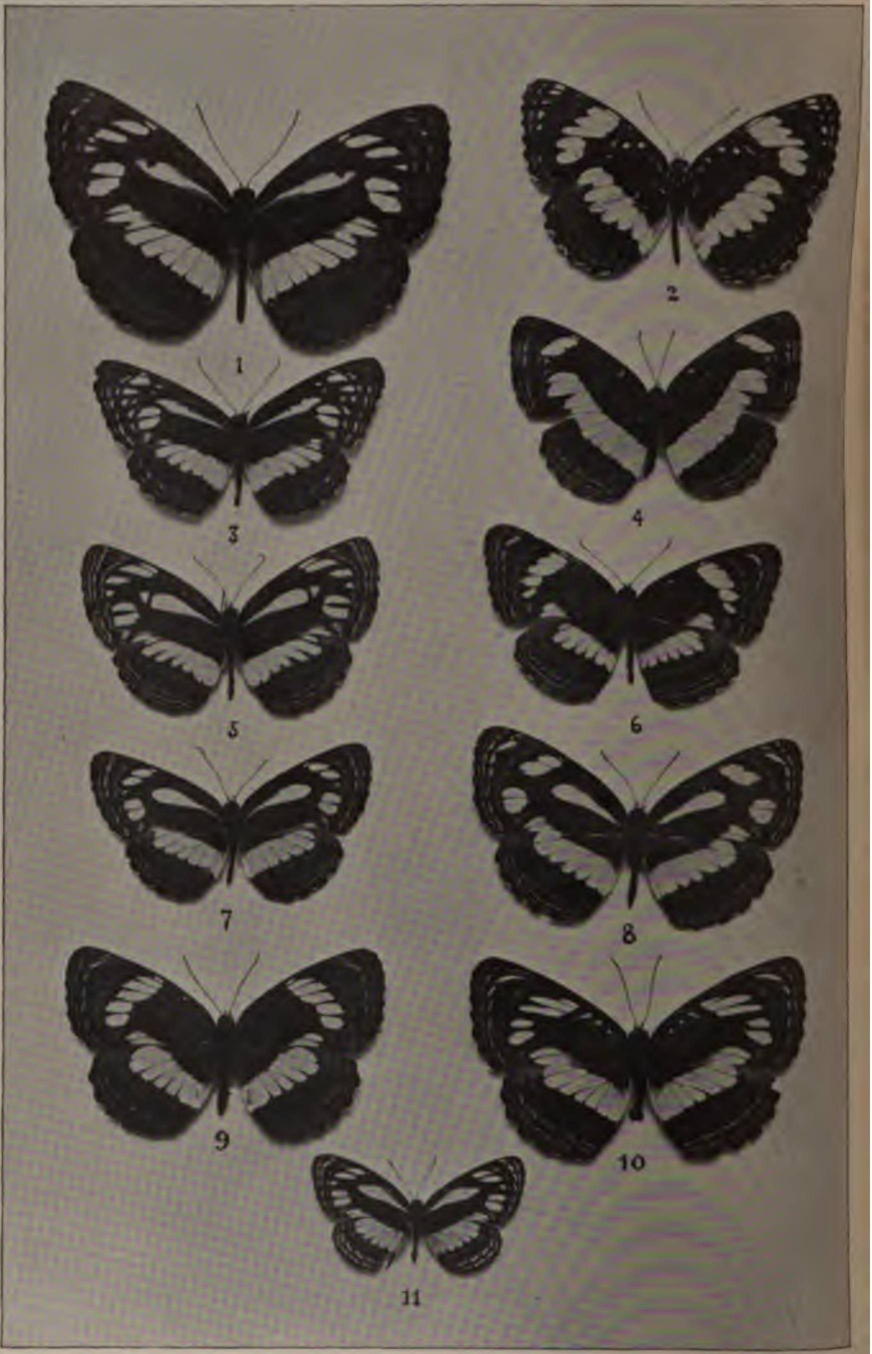
* Contains new species other than North American.

Meeting held June 13, 1892, Mr. Ridings in the chair. Members present: Ridings, Laurent, Martindale, Welles and Skinner. Associates: Fox, Calvert and Nell. Mr. Laurent stated that on the 1st of May this year he started to rearrange his water beetles, and thought he would collect some fresh material and exhibited his captures very nicely arranged. One rare species, *ovatus*, was collected by two boys, who let some specimens go because they would not go in the collecting-bottle they had. All were collected in a short time, one whole day and four afternoons. In all, sixty-six species were taken, numbering about fifteen hundred specimens. Mr. Calvert mentioned having caught *Tetragoneura cynosura*, a rare dragonfly, on June 6th. He had collected a few specimens previously. It flies very high, and its flight is sustained for quite a period of time. It alights occasionally on the edges of woods and thickets. He exhibited specimens of the species and spoke of the characters of the family and its allies. Mr. Nell spoke of the scarity of Microlepidoptera, and Dr. Skinner said the late season had retarded insects in various parts of the West. Mr. F. Weber was elected an associate of the Section. Section then adjourned until September.

Meeting held Sept. 22, 1892, Dr. Horn, Director, presiding. Members present: Liebeck, Martindale, Skinner, Welles, Ridings. Associates: Johnson, Nell, Fox, Weber, Westcott, Haimbach and Dr. Castle. Dr. Horn exhibited two boxes of Galerucini, showing the results of his work on these beetles, and stated that the number of new species was but few, and that too much attention had been paid color values and too little to structure. The material shown will illustrate a coming paper on these insects. Mr. Nell stated that he had taken twenty-six specimens of *Pamphila leonardus* on September 4th, near Atco, N. J. They were found on boneset and iron weed. Dr. Skinner stated that he had received a number of full grown larvæ of *Papilio cresphontes* found on September 18th at Sellersville, Pa., on prickly ash. Mr. Westcott reported seeing *P. cresphontes* and *Callidryas eubule*, at Westville, N. J. Mr. Ridings spoke of the unusual number of *Catocala* moths seen in the city limits during the Summer. Mr. Martindale reported having collected 500 specimens of Lepidoptera in Indiana during a short visit to the State. Dr. Horn mentioned having lately received a new species of *Anophthalmus* from Kentucky. Mr. Martindale reported capturing 200 specimens of *Hemaris thysbe* in Chester County, Pa.

Dr. Henry Skinner, *Recorder*.

ENTOMOLOGICAL NEWS for October was mailed September 30, 1892.



1. N. NEBRODES Hew.
2. N. AGATHA Cram.
3. N. METELLA Doub.-Hew.
4. N. NEMETES Hew.
5. N. MELICERTA Dru.
6. N. METANIRA Holl.
7. N. NICOBULE Holl.
8. N. NICOTELES Hew.
9. N. BIAFRA Ward, var. CONTINUATA Holl.
10. N. BIAFRA Ward.
11. N. MIXOPHYES Holl.

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. DECEMBER, 1892. No. 10.

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## NEW COLEOPTERA FROM CALIFORNIA.

By F. E. BLAISDELL, M. D.

**Eleodes interrupta** n. sp.—Length 16.6 mm.; width 7.1 mm. Body slightly inflated, convex; color black. *Head* little shorter than wide, rather more than half as wide as prothorax; finely and evenly punctate, somewhat coarser on epistoma; antennæ slender, reaching to base of pronotum, terminal three joints but slightly widened. *Prothorax* one-sixth wider than long, evenly convex, apex feebly sinuate in circular arc, angles obtuse; sides in anterior half moderately arcuate, in posterior half straight and moderately convergent to base, margin rather abruptly interrupted at middle for the distance of one millimetre; base slightly arcuate, angles quite broadly obtuse; disc very finely, evenly and sparsely punctate, alutaceous. *Elytra* at base perceptibly wider than contiguous base of prothorax, and about two and one-half times longer than the latter; widest at middle; sides evenly arcuate; humeri not prominent; disc smooth, shining, punctate, not sculptured in anterior half, posteriorly sulcate, ridges narrow, very convex, nearly angulate, alternately prominent, intervals twice as wide as ridges, outer longest, others gradually shortening towards suture, sutural sulci obsolete, punctures not impressed, moderately fine, nearly simple, not asperate at sides, arranged in rows, alternate rows coarser passing into the intervals, in the finer series the punctures more distant and less regularly placed, becoming mostly obsolete on ridges; apex declivous, tips everted. Legs moderately slender; anterior tibial spurs very unequal, middle equal, posterior subequal.

*Hab.*—San Diego.

This species has the general appearance of *gentilis*, but is unique in the character of its sculpturing.

**Blapstinus Coronadensis** n. sp.—Length, males 4.6–5.6 mm.; females 5–6.3 mm.; width ♂ 2–5 mm.; ♀ 2.8 mm. Form elongate oblong; color black, legs and antennæ rufo-piceous; surface polished; pubescence evenly distributed, conspicuous, rather long, recumbent, pale flavate. *Head* feebly transverse, moderately finely densely punctured; epistoma narrowly and deeply sinuate; eyes moderate, rounded; antennæ rather slender, moderately incrassate in last four joints. *Prothorax* moderately convex, about a third wider than long; apex feebly emarginate in circular arc, angles slightly acute; sides subparallel in posterior third and thence to apex rather strongly arcuate; base transverse, lateral sinuations feeble, angles right; disc moderately finely, densely and evenly punctured, basal impressions just perceptible. *Elytra* about two and a half times longer than prothorax, sides subparallel, very feebly arcuate to posterior third, then rather evenly and strongly to apex, which is rounded; base transverse, not perceptibly wider than contiguous base of prothorax; disc finely striate, striæ very feebly impressed, finely and regularly punctured, intervals just visibly convex, extremely finely punctured; scutellum bright. *Abdomen* finely and sparsely punctured; legs moderate, femora rather robust.

*Male.*—Anterior and middle tarsi dilated, but not as strongly as in *rufipes*. Eyes larger; abdomen feebly impressed in middle towards base; head shorter and more transverse.

Described from a male and female, supplemented by a series of one hundred specimens. A distinct species and readily distinguished from *rufipes* by having well-developed wings, which are about one-third longer than the elytra, the smooth and polished surface, denser pubescence, finer punctuation, nearly flat elytral intervals, darker legs and less dilated tarsi. The pubescence is very readily removed by slight friction, and cabinet specimens are generally quite denuded. The species is diurnal. Frequents garbage heaps during May and June.

I have carefully compared the above series with a large series of *rufipes* and found no intergrading of alar development. On the other hand, there was a wonderful constancy in the form and size of the rudimentary hind wings in the latter species, agreeing in details with the description given by Thos. L. Casey in his "Coleopterological Notices," p. 440.

Careful examination of a large series of *rufipes* demonstrates that the elytral intervals may be decidedly convex, and always more so than in *Coronadensis*. The former species is often quite pruinose when captured, and this I have never observed in the latter.

**Ulus latus** n. sp.—Length 7.1 mm.; width 3.7 mm.; elliptical, strongly convex, piceous, legs and antennæ concolorous; pubescence pale luteous, rather long, moderately slender, recumbent, and quite evenly distributed, but not densely so. *Head* moderately transverse and convex, rather coarsely and evenly, but not densely punctate; epistoma rather deeply sinuate; antennæ slender, joints nine, ten and eleven, subequal in width, last visibly longer than wide and narrowly rounded. *Prothorax* scarcely twice as wide as long; apex rather more than three-fourths as long as base, quite strongly emarginate in circular arc, angles slightly rounded; sides convergent, in basal third straight, very feebly arcuate in anterior two-thirds; base moderately arcuate at middle third, laterally slightly sinuate, angles right; frimbriæ moderately short and robust; disc convex, strongly so in basal third, feebly dished at lateral sinuations, rather coarsely and unevenly punctate, somewhat denser at sides, interspaces polished. *Elytra* strongly convex, widest in middle third; base nearly equal to contiguous prothorax; sides evenly arcuate, apex rounded; disc feebly striate, striæ not perceptibly impressed, closely, evenly and rather coarsely punctured, intervals equal, not convex, finely and quite sparsely punctate, surface feebly shining; scutellum narrow, triangular, impunctate, glabrous; pubescence confined to intervals, giving the elytra a decidedly striate appearance. *Abdomen* finely and rather densely punctate; apical segment slightly dished near tip. Legs long, faintly rufo-piceous, anterior femora decidedly robust.

Type a female. San Diego River.

This species differs from *crassus* in being strongly convex, with convergent sides of prothorax; from *fimbriatus* in the character of the pubescence.

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## ENTOMOLOGIZING ON MOUNT WASHINGTON.—Part II.

By R. Ottolengui, M.D.S., New York.

At three miles we saw the last straggling *semidea*, and the trees became more like trees and less like bushes. Suddenly a little red butterfly crossed the road close to me. With Dr. Scudder's statement in my mind, I was so astonished to see a real live *montinus* that I stupidly stood still as it flew over the wall and disappeared far down among the crags. I was so disgusted with myself that I started to go in pursuit, but was stopped by Mr. Perkins, who showed me the folly of climbing over a dreadfully steep embankment in search of an insect that had passed from view. Half a mile further we could easily see below us the half-way house, toward which we were aiming. Just here the road makes a long detour in the shape of a horse-shoe. To save a part of the walk we started to climb down and across. Along the rocks we found the curious mountain blue-berry bushes. They are scarcely taller than lichens, and the fruit is most temptingly exposed, being exclusively on the top of the plants. We plucked a handful, but they were not as sweet as those in the valley. Suddenly another *montinus* flitted by, and my first capture was made. Presently we dropped into the carriage road again, about two hundred yards above the half-way house. Between this point and about a similar distance beyond the house, by walking along the road itself, Mr. Perkins and I captured fifteen specimens in the course of half an hour. By this time it was ten o'clock and we started to return, having a long, hard four-mile walk ahead of us. One does not realize, till he tries it, how easy it is to get "out of breath" chasing an insect in this rarified air. But the pursuit of such a rarity as *montinus* makes one forgetful. We had gone about half a mile, in the next half hour, and taken five more specimens, when we were overtaken by a man driving a buck-board, and quickly engaged passage with him to the summit. The trip up was thus made very enjoyable as whenever we saw anything on wings it was easy to get out and go after it. Thus we took five more of *montinus* in the next fifteen minutes, after which we saw no more. I may pause for a few comments. Observe that we took twenty-five of *montinus* before eleven o'clock, an hour after which we usually make our best captures in the valley. I am confident that if we could have remained on the spot for the rest of the day we could have taken a hundred specimens, as we were fortunate to find them plentiful. This makes it worth while for any one designing to go there to note the date, which was August 6th. They feed on any of the mountain flowers, but nearly all of ours were taken on a variety of Golden-rod.

I made two other notable captures during the ascent. One a fairly large gray geometer, which I have not identified as yet, and the other a *Plusia*. This is either *octoscripta*, or something unknown to me. It is a brilliant black with gray markings, and a handsome specimen.

Reaching the summit we had dinner, and then went for some more of *semidea*. Hunting in the same place above described I soon found how to capture *Anarta Schoenherri*. I will endeavor to direct the reader. Whilst it is true that the rocks look all alike, it will not be hard to select the largest patch of green seen about a hundred yards down the cliffs. Reaching here in pursuit of a single insect which I saw alight, I found *A. Schoenherri* feeding on the blossoms of various plants, and to my astonishment found no trouble in taking them with a bottle, obtaining about a dozen good specimens. Here also were *semidea*, which could be picked up in the grass with the fingers. Unfortunately, it was really too late in the season for *semidea*, and when the record of the two days was examined we found that we had only sixty good specimens between us, throwing away more than that number.

Though not a Coleopterist myself, I try to remember that others are when I am hunting, and capture anything that I see. Thus I took ten varieties of beetles among the rocks at the summit, which will be given to the first friend who applies for them. Two are handsome species of Longicorns. As a matter of curiosity I also captured and brought home to be labeled "Summit of Mount Washington" *Pieris rapæ*, *Colias philodice*, *Vanessa Milbertii*, *Argynnis atalantis*, *Grapta progne*, and *Drasteria erechtea*. I have also taken *Papilio turnus*.

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## EGG AND LARVA OF TWO LITHOSIANS.

By Harrison G. Dyar, Boston, Mass.

**Crambidia pallida** Packard.

1864.—Pack., Proc. Ent. Soc. Phil. iii, 99.

*Egg.*—Oblately spheroidal, slightly more flattened on the basal side than above, smooth, shining, pale pink, not obviously reticulated, though the surface is somewhat irregular; diameter 0.6 mm. The eggs are laid perfectly loose and separate so that they roll around in the box.

*First larval stage.*—Head round, smooth, shining, pale brownish; mouth and vertex brown; ocelli black; width about 0.25 mm. Body cylindrical, the warts not perceptible, but the hairs distinct, blackish; segmental incisures evident; feet normal. Color pale reddish, darker on the back.

The larva looks like a little *Arctian*, though the warts are not distinguishable. The hairs are simple, pointed at the tip, but swollen, or glandular at the base.

**Hypoprepia miniata** Kirby.

1837.—Kirby, Faun. Bor.-Am., pt. iv, p. 305.
1879.—Bethune, Can. Ent. xi, 154.
1889.—Hy. Edwards, Bull. 35, U. S. N. M., 55 (references as *fucosa*).

*Egg.*—Subspherical, much flattened on the basal side, coarsely and evidently reticulated even under the lens. Under a half inch objective it appears covered with broad, rounded reticulations, which leave between them large, shallow, roundedly hexagonal depressions. Color dark, shining, lead color, with a slight metallic green cast. Diameter 0.6 mm. Laid loose and separate.

*First larval stage.*—Head cordate, black, shining; width about .3 mm. Body deeply incised between the segments, cylindrical. feet normal; warts inconspicuous, hairs distinct, blackish. The body is orange color, with a dark band from near the head to back of the middle, showing by transparency, but later becoming an evident, geminate, brownish dorsal band. The warts are low and conical, concolorous, normal in arrangement, each bearing a single hair. The hairs are minutely spinulated.

## COLORADO CYNIPIDÆ.

C. P. GILLETTE, Fort Collins, Col.

All of the Cynipidous galls or gall-flies mentioned in this paper have been taken by the writer in the State of Colorado since the first of January, 1891. Quite a number of galls, apparently new, have been taken from scrub oaks (*Quercus undulata*), from which no flies have yet appeared. Of these I shall make no special mention until the flies can be obtained, as there is little use in describing the galls alone, and I do not think it right to name galls as if they were insects.

### RHODITES.

*Bicolor.*—Galls moderately common in the foot-hills near Fort Collins and also taken at Manitou.

*Fusiformans* Ashm.—This is a very abundant gall on rose bushes in the foot-hills of the State from north to south.

*Ignota* O. S.—Galls taken in foot-hills near Fort Collins. Rather scarce.

*Polita* Ashm.—Galls found very common on rose bushes at Manitou, Col., on Sept. 10, 1892.

*Radicum* O. S.—A single gall was taken from the root of a rose in northwestern Colorado in August, 1891, but being immature, no flies issued from it.

*Rosæfolii* Ashm.—I found the galls of this species quite common at Manitou in September, 1892, and have taken a few specimens from rose leaves in the vicinity of Fort Collins.

*Tuberculator* Riley, MS.—Galls of what I suppose to be Riley's *tuberculator* I have found common at Fort Collins, Manitou and Dolores, during the past Summer.

## ANTISTROPHUS.

*Pisum* Walsh.—Galls common on stems of *Lygodesmia juncea* in the vicinity of Fort Collins.

## ANDRICUS.

But two species of this genus have been taken, both of which are new.

*D. cellularius* n. sp. Galls.—The galls are small, thin capsules, occurring singly in the buds of *Quercus undulata*. The bud scales cover the galls completely, and there is nothing to indicate their presence until the fly escapes, leaving a small round hole.

*Gall-fly* ♀.—Black, with reddish yellow feet, antennæ and jaws. Length 1.5 mm. *Head* black and shining, face coarsely striate between the eyes and mouth; vertex, occiput and genæ having a fine crackled appearance, ocelli rather inconspicuous, frontal ridge beneath antennæ broad and prominent, mandibles reddish yellow, except at the very tips, where they are black, palpi whitish; antennæ 13-jointed, reddish yellow in color and infuscate at tip; last joint as long as the two preceding together; slightly clavate. *Thorax* black and with crackled appearance like the head; parapsidal grooves sharply defined, scutellum bifoveate and coarsely rugose, pleuræ coarsely aciculate. *Abdomen* black and highly polished. The large second segment covers nearly the entire surface, fully seven-eighths of it. *Feet* reddish yellow, hind tibiæ and femora more or less infuscate in some specimens. *Wings* hyaline, slightly longer than the body; subcostal, radial and transverse nervures rather stout, the others very weak, the areolet only discernible in very favorable light.

Described from thirty female flies bred from galls taken at Trinidad, Col., May 14, 1892. The flies began emerging May 20th. No males were obtained.

**A. frequens** n. sp.

*Galls.*—The galls are dense corky enlargements of small limbs of *Quercus undulata*. They are irregular in size and shape, and are covered with bark like the rest of the limb. Large galls seldom exceed two-thirds of an inch in diameter by two inches in length. All polythalamous; they are exceedingly abundant at Manitou, Col. Galls taken May 8th of this year began giving flies two days later.

*Gall-fly* ♀.—Black, with head, feet, portions of thorax, and basal portions of antennæ rufous. Length 1.75—2.5 mm. *Head* varying in color from a good cinnamon-brown to almost black, but with no black markings except the tips of the mandibles, the borders of the mouth and the compound eyes. Face coarsely punctured and with striæ radiating from the mouth. Antennæ 15-jointed, rufous at base, last six or seven joints black. *Thorax* somewhat darker than the head, varying from cinnamon-brown to almost jet-black. The surface is finely and densely wrinkled, the wrinkles running in a transverse direction; parapsides narrow, but distinct; the two parallel lines extending back from the prothorax not very distinct; scutellum bi-foveate. the foveæ rather small and very black, surface of scutellum wrinkled like the thorax; thorax and abdomen rather sparsely set with gray hairs, humeri wrinkled like the mesothorax, pleuræ very finely scratched; abdomen black, polished, somewhat rufous in rufous specimens. *Feet*, including coxæ, with the exception of the posterior tibiæ, rufous; the posterior tibiæ infuscate. In dark specimens the posterior femora and the middle tibiæ are somewhat infuscate. In the darkest specimens all of the feet are somewhat blackish. *Wings*, length in large specimens 3 mm., areolet medium in size, but faint on account of the very slight cubital nervure, radial area long and narrow, radial nerve not attaining the costa, the two transverse nervures quite heavy.

Described from thirty-one reared specimens, all females.

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## NEW SPECIES OF NEPTIS FROM AFRICA.

(Plate IX.)

By W. J. Holland, Ph.D., Pittsburg, Pa.

I have recently been going over the collections of African Lepidoptera in my possession with a view to the preparation of a synonymic catalogue of those of the tropical West Coast. I have completed the revision of the species of *Neptis* found in the Ogove Valley, and make out no less than ten good species and one variety, which some authors would possibly reckon as a species. The species are the following: *nebrodes* Hew., *Biafra* Ward, *nemetes* Hew., *nicoteles* Hew., *nicobule* sp. nov,, *metanira* sp. nov., *mixophyes* sp. nov., *metella* Doubl.-Hew., *Agatha* Cram., *melicerta* Dru. To these add *N. Biafra* var. *continuata* var. nov. I herewith give descriptions of new forms, and the accompanying reproduction of a photograph of the various species I trust will be of assistance to those who are engaged in the study of this somewhat difficult group.

**N. Biafra** Ward, var. **continuata** var. nov. ♂.—Agreeing with *Biafra* in all respects save in the form of the band of large white spots which traverse the anterior wing beyond the cell. In *Biafra* the three nearest the costa are long and linear and the two following are oval, divergent, and somewhat widely separated from the spots nearest the costa. In *continuata* the spots form a continuous uninterrupted band, in which all the spots, except the lower one, which is suboval, are subquadrate. The difference in the form and spacing of these spots imparts a widely different facies to this form. It is worthy of note that the transverse spots in the cell of the primaries of *Biafra* are not constant. In some specimens they are very faint, and in some altogether wanting.

**N. nicobule** sp. nov. ♂.—Allied to *N. nicoteles* Hew. The markings of the upperside of the anterior wings differ from those of *N. nicoteles* in the form and arrangement of the transverse white spots beyond the cell, which in *nicoteles* form a continuous band, and in *nicobule* a widely separated series of four spots, of which the one nearest the costa, and the one opposite the end of the cell are minute, while the two middle spots are large and oval. The marginal lines are interrupted below the apex, and near the middle of the outer margin by dark longitudinal shades. The spot of the transverse series situated upon the hind margin of the anterior wings in *nicoteles* is large and bifid; in *nicobule* it is simple, and consists merely of a small subtriangular patch of bluish white scales. Upon the underside of the primaries of *nicobule* the dark shading which interrupts the marginal is much more distinct than upon the upperside, and there are but three submarginal bands of white, while in *nicoteles* there are four. Expanse 43 mm.

**N. metanira** sp. nov. ♂.—Allied to *N. Biafra* Ward.—The wings are narrower and more produced than in *Biafra*, and the margins are not scalloped, but even. The transverse band of white spots beyond the cell upon the primaries is composed of six spots, the one on the costa minute, the three following large and fused together forming a transverse spot indented outwardly upon the nervules. This is followed by two divergent oval spots, of which the lower one is the smallest. The transverse median band upon the secondaries is relatively narrower than in *biafra*, and more deeply indented externally, and is clouded internally by pale fuscous. The submarginal lines are bright bluish. Upon the underside the primaries have four marginal lines, while in *Biafra* there are generally but three. Expanse 45 mm.

**N. mixophyes** sp. nov. ♂.—Belonging to the same group as *nicoteles* and *nicobule*, characterized by a long, uninterrupted, white longitudinal ray traversing the cell from the base to its extremity. In *mixophyes* this ray is acute at its extremity and not rounded as in the other species. The transverse median series consists of six white spots arranged in a curve. The two spots nearest the costa are subovate and elongated, the next, opposite the end of the cell, is minute; the next two are large and collocated, the upper one subquadrate, and the lower one subovate. The sixth spot, which is located upon the inner margin, is triangular, and is bisected by the submedian nerve. There are three submarginal lines, the middle one being the most conspicuous. The posterior wings are traversed by a relatively broad median band of white spots indented outwardly upon the nervules. This is followed by a series of narrow fuscous spots, and these are succeeded by a band of darker markings. There are two submarginal series of very narrow white lines. The underside is marked as upon the upperside, but the submarginal white lines are widened enormously, covering the entire outer margin, and the intervening dark spaces are reduced to narrow lines. Expanse 32 mm.

This is one of the smallest species of the genus, and with the exception of *N. Goochi* Trim., from Natal, the smallest species hitherto described from the African continent.

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## NEW SPECIES OF NOCTUIDÆ.

(Plate X.)

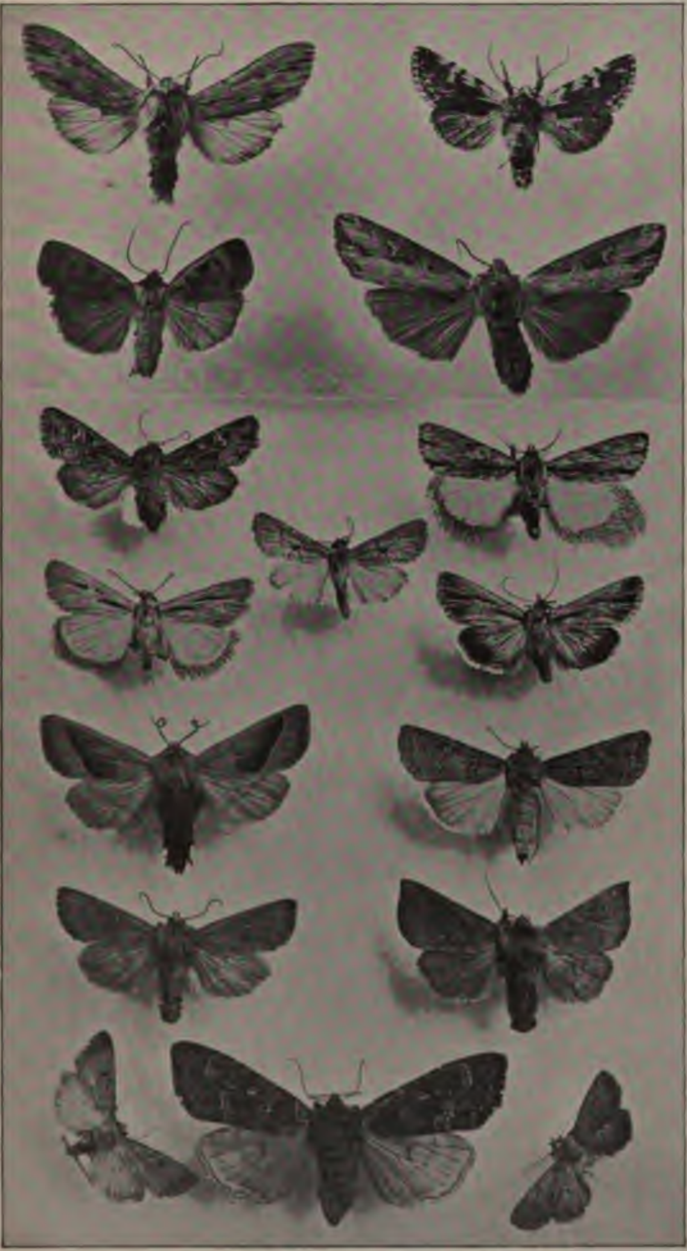
By JOHN B. SMITH, New Brunswick, N. J.

The following diagnoses of new species of Noctuidæ are merely preliminary to the fuller descriptions which have been prepared for the "Transactions" of the American Entomological Society. Not so much *pour prendre le temps*, as to furnish a text for the plate given herewith, and which is made from a photograph of the types to test the possibilities of this method of illustration. The figures are about one-fifth less than natural size.

**Mamestra fuscolutea** n. sp.; first row 3rd figure.—Dull, somewhat fuscous clay yellow, resembling *trifolii* in this respect. The s. t. line is rather prominent, whitish, with a feebly marked W, which is emphasized by the whitish streaks on veins 3 and 4, crossing the line. The irregular ordinary spots are distinctly white ringed. It is an ally of *trifolii* and *chartaria*, and has a vague resemblance to *Hadena devastatrix* from the series of sagittate spots preceding the s. t. line. Expanse 35—40 mm.; 1.40—1.60 inches.

*Hab.*—Colorado, Bruce; two female specimens No. 284, 291.

**Oncocnemis nigrocaput** n. sp.; first row, 4th figure.—Head very deep brown or blackish, collar faintly pink at base, bounded by a narrow black transverse line. Color whitish, powdery, the veins blackish; a black basal dash, and a black streak from the orbicular to the outer margin, broken at the reniform in the male, continuous in the female; secondaries



AMERICAN NOCTUIDÆ (Smith).

white. Belongs to the group *atricollaris*, and resembles Mr. Grote's description of *griseicollis*, save that the latter has the transverse lines marked and no basal streak. Expands 1.30 inches; 32 mm.

*Hab.*—Colorado. Bruce, one ♂ (No. 296), one ♀ (No. 181).

**Oncocnemis extranea** n. sp.; second row, 4th figure.—Gray with a fuscous admixture; head dusky; collar with a black transverse line at base and near tip. Primaries with a black basal dash, to which the claviform is attached; a black streak in median cell; black interspaceal streaks through the darker terminal space; secondaries pale, with fuscous outer margin. Expands 1.25 inches; 31 mm.

*Hab.*—Colorado. Bruce, one ♂ (No. 180).

Belongs to group *atricollaris*, but resembles, somewhat, *coloradensis*, of the *Chandleri* group.

**Homohadena figurata** Haw.; center row, upper figure.—This species was unknown to me when I wrote my revision of *Homohadena*, and was then recorded from Nevada only. Mr. Bruce has now taken it in Colorado.

**Acronycta** n. sp.; second row, 3rd figure.—Specimens of this species are in several collections and have been sent me for determination. Dr. Riley has given it a mss. name, I believe, to be published in his intended monograph of the genus. The figure is presented here experimentally only and not for purposes of description.

**Hydrœcia medialis** n. sp.; first row, 6th figure.—Of the usual rusty yellowish, gray, red or brown, varying in shade, the median space distinctly darker. Male antennæ serrate and bristled; secondaries paler, more yellowish, with the median line of underside visible through. Expands 1.72—1.78 inches; 43—45 mm.

*Hab.*—Colorado. Bruce (No. 138).

Specimens of this species are in several collections. It is related to *immanis* and *obliqua*, differing most obviously in the contrasting median space.

**Hydœcia senilis** n. sp.; first row, fourth figure.—Pale yellowish red, scarcely rusty, the median lines darker, the ordinary spots more yellow; secondaries paler, more yellow, more or less black powdered. Male antennæ ciliated. Expands 1.50—1.52 inches; 37—38 mm.

*Hab.*—Colorado. Bruce (No. 26 ♂, 206 ♀).

The insect belongs to the *nictitans*, *juvenilis* series, intermediate in color and larger than either. It has a strong superficial resemblance to *Pachnobia pectinata*.

**Hydrœcia unimoda** n. sp.; second row, 4th figure.—Dull powdery luteous, with a slight admixture of red; all the lines marked, but scarcely contrasting; a yellow apical patch and a similar, less distinct blotch at base of primaries; secondaries paler, powdery. Male antennæ ciliated. Expands 1.56 inches = 59 mm.

*Hab.*—Colorado. Bruce (No. 244) one ♂.

In wing form and type of maculation belongs to *rutila* series, with the prominent divided thoracic tuft of *nitela*.

**Carneades conjuncta** Smith; second row, 5th figure.—The species was described from New Mexico; the figured specimen is from Colorado. Bruce (No. 459).

**Peridroma nigra** n. sp.; middle row, lower figure.—The type of maculation is as in *occulta* and *astricta*, from which the new species differs by the powdery black fore wings, the markings picked out by whitish scales, and the white, black-powdered secondaries. Expands 2.12 inches; 53 mm.

*Hab.*—Colorado in September. Bruce (No. 462). A single female only.

**Carneades** n. sp.; second row, 7th figure.—This little species, belonging to the *messoria* group, though without doubt new, I prefer to leave unnamed, because it is defective and I have a single female only.

**Caradrina meralis** Morr.; first row, 7th figure.—A rather distinct little species which I have received from Mr. Bruce (Nos. 362, 440), and somewhat doubtfully labeled *meralis*.

**Pleroma apposita** n. sp.; second row, 1st figure.—Contrasting black and white, very different from *obliquata*, which is of a uniform ash-gray. The maculation is lost, except in the costal region, and the s. t. line only is marked by white scales the full distance. Expands 1.32 inches; 34 mm.

*Hab.*—Victoria, B. C. Mr. Neumoegen, one ♂ only.

**Noctua flavotincta** n. sp.; first row, 2nd figure.—Most nearly related to *oblata* Morr., but the collar is brown and the disc of thorax pale luteous gray in the new species, while in the described species the matter is reversed. The primaries a red-brown, the markings and costal region yellowish; claviform and cell between the ordinary spots black. Expands 1.32 inches; 34 mm.

*Hab.*—Victoria, B. C., collected by Mr. C. J. Weidt; two males, one of them with Mr. Neumoegen.

**Calocampa brucei** n. sp.; second row, 2nd figure.—Most nearly allied to some forms of *cineritia*, but differs in the paler, more ashen gray of the primaries, and most markedly by the pale thoracic disc, all other species having this much darker than the ground color of primaries. Expands 2 inches; 50 mm.

*Hab.*—Colorado. Bruce, ♂ and ♀.

I take pleasure in naming this fine species after its discoverer.

**Rancora strigata** n. gen. et sp.; first row, 1st figure.—An ally of *Cucullia*, differing from it in the heavier thorax, shorter body, improminent hood to collar, serrate antennæ of male and broader, less lanceolate wings. The color is ashen gray, the transverse markings are obsolete and the longitudinal dashes are obvious outwardly. Expands 1.75 inches; 44 mm.

*Hab.*—Victoria, B. C., one ♀ ; Mr. Neumoegen.

It is possible that *Cucullia serraticornis* may be congeric, but this species is larger, more robust, the wings broader, less lanceolate.

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## Notes on Bruchus alboscutellatus, Miarus hispidulus, Cœliodes acephalus, and a new Thiobius.

By John Hamilton, M. D., Allegheny, Pa.

*Bruchus alboscutellatus* Horn, breeds abundantly in the seed capsules of seed-box, Bastard Loosestrife, *Ludwigia alternifolia*, a perennial plant of the Onagraceæ family, which grows in wet places. The ripe capsule is coriaceous, with four-winged angles, perforated at the top, divided internally into four cells each containing a hundred or more seeds, and is about the size of a pea. Each cell usually contains a *Bruchus* in some stage, and if the larva eats the seeds the diminution in their number is not very great. As the dead plant stands rigid and its capsules indehiscent till Summer, and not eaten by birds or animals, it is quite probable the beetles remain in them all Winter, or even till the time the plant is in bloom. At this time, October 20th, the capsules contain larvæ, pupæ and beetles in about equal numbers.

This is a wide departure from the food-habits of any of the North American species of *Bruchus* on record,—*rufimanus*, *pisorum*, *chinensis*, *4-maculatus*, *desertorum*, *obscurus*, *obsoletus*, *Schrankiæ* and *aureolus*, are known to inhabit the seeds of leguminous plants. *Pruninus* occurs on the Ironwood of Arizona (family unknown to me), but whether it breeds in the fruit is not stated. It is quite likely other species of *Bruchus* may inhabit the seed vessels or succulent parts of other plants, especially of such as have persistent capsules or pods.

The dents on the hind femur of this species are usually three, a large basal, small median and moderate apical, well separated; sometimes the apical is absent, occasionally the apical and median; and sometimes the femur on one side will have the normal number, while the other will have only one or two, in which case the basal one is larger than usual.

*Miarus hispidulus* Lec.—Since Mr. Blanchard's statement, made two or three years ago, that this insect bred in the seed-pods of *Lobelia inflata*, no opportunity to examine this plant has been lost, but the results have been negative. However, on the 1st and on the 15th of October I found *L. syphilitica* (blue cardinal flower), a rank plant growing in wet places, the seed capsules or pods of which contained the larvæ, pupæ and beetles in great abundance. This species of *Lobelia* flowers in a progressively elongating raceme, each flower being in the axil of a leafy tract; flowering begins in July at the base of the raceme, advancing upwards till the plant is killed by frost, which here is sometimes late in October. Thus it happens that on the same raceme there may be at one time blossoms, green, ripe, and dehisced capsules. Whether the first capsules contained beetles cannot be asserted from knowledge, but this is probable, and that some of these are the parents of the larvæ and pupæ in the later developed pods is quite likely. The beetles seem to leave the pods for hibernation, or at least all which were in those kept in my office for observation did so through a round hole cut near the base, though in the field nothing of this was seen.

*Cœliodes acephalus* Say.—As is known, this species occurs in abundance during July on the evening primrose, *Oenothera biennis*, but no record of its breeding in the seed-pods has been observed. I discovered a female employed in the act of oviposition about the middle of July. A puncture had apparently been made by the beak, and the beetle turning round inserted an egg in the puncture which I obtained. No larvæ, pupæ, nor beetles were found in the capsules October 1st, from which it would appear pupation occurs in the earth. Was this oviposition accidental?

*Thinobius* sp.—Lovers of small things may be interested in knowing that an undescribed species of this genus may be found early in October in old leaves about decaying mushrooms. It has yellow antennæ and legs, and seems to differ from *T. flavicornis* Lec. by its smaller size, thorax rounded at base and the evident lustre of the thorax and elytra. The first joint of the antennæ is stout and long, the second as thick, but about one-third the length, the third is attenuate at base and longer than the apical width; the outer ones gradually enlarge, becoming transverse, and are setose with long stiff hairs. It is a graceful little thing, not over .02 inch. long, resembling much an *Aleocharid*, but the antennæ are not inserted on the front and are very conspicuous. I put more than a dozen into a collecting-bottle with other things, and only succeeded in getting two out of it,—a warning that the collector should always have something at hand for special things.

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## EREBIA SOFIA Streck.

By Dr. HERMAN STRECKER, Reading, Pa.

Having examined an example in Dr. Skinner's collection of the *Erebia* described in "Can. Ent." vol. xiii, p. 31, 1891, by Mr. W. H. Edwards as a new species under the name of *Erebia Ethela*, I find it to be identical with the above *E. sofia* described by myself in "Bull. Brook. Ent. Soc." p. 35, 1881; the type came from west coast of Hudson Bay, high up, was sent with large numbers of other Lepidoptera from the Episcopal Mission to Mr. W. Jeffcken by Archdeacon Kirtby, who sojourned in those inhospitable regions for over twenty years.

Mr. Edwards' types were, as he states, taken by Prof. Ed. T. Owen in the Yellowstone Park, Montana. It is not, however, as its author states "allied to *Erebia epipsodea*," but is exceedingly close to *E. Keferstcinii* Ev., a Siberian species.

The representation of the genus *Erebia* in our fauna is very meagre; all are, of course, confined to the Alpine and Arctic regions of the continent, the following are all so far known:

*Disa* Thub.—That *Rossi* Curt. and *fasciata* Butl. are but varieties of this species there seems to me to be but little doubt. I have received *fasciata* from Hudson Bay above Fort Churchill, also a single example through the goodness of Mr. Fletcher from Nepigon; this differs from the Polar examples, but not to a degree that would warrant specific separation.

*Discoidalis* Kby.—A beautiful and conspicuous species occurring from the Polar regions downwards in various parts of British America; also in East Siberia.

*Epipsodea* Butl.—A species peculiar to the Rocky Mountains of Colorado, etc.

*Tyndarus* Esp.—Found in the Rocky Mountains, and in the Alpine regions of various parts of Europe.

*Magdalena* Streck.—An almost unicolorous blackish species whose nearest ally would be the old world species *alecto* Hüb.

*Haydenii* W. H. Edw.—With this I am unacquainted.

*Vesagus* Dbldy.-Hew. is not an *Erebia*, nor even a North American insect, but is a South American species belonging to the genus *Lymanopoda*.

——o——

## COLLECTING IN THE FAR NORTH.—Part I.

### II. THE STIKINE RIVER.

By H. F. Wickham, Iowa City, Iowa.

The Stikine River is one of the largest of the streams flowing into the Pacific through our Alaskan territory. It is of sufficient size to permit of navigation by steamers of three and one-half to four feet draught, and with powerful engines, from the mouth to Glenora, and occasionally to Telegraph Creek, twelve miles further on, a total distance of about 138 miles. A little above this point is the "Great Cañon," where the current is too swift and the water too rough for the passage even of canoes in the skillful hands of native Indians.*

Leaving Fort Wrangel at high tide, early on the morning of the 11th of July, we were soon over the bar which stretches across the mouth of the river; just here the current is not very swift, but on ascending a little distance it becomes apparent that the engines are being worked to nearly their full capacity in order to make any headway. At our first stop, made for the purpose of taking wood aboard, I got out and tried to find some insects, but with the exception of a few *Bembidium quadrifoveolatum*, taken from beneath the bottom logs in the wood-pile, nothing of the sort was visible—always leaving out of account the mosquitoes, midges and Tabanidæ, which, on the contrary, were seldom absent. The undergrowth here was too thick to penetrate without an axe, and, even had there been time to cut a patch through the bushes, the fallen timber presented an almost impassable barrier to progress. That afternoon we passed the international boundary and left Alaska for British Columbia.

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* See Annual Report of the Geological and Nat. Hist. Survey of Canada, new series, Vol. III, Part I, 1888. The reader is referred to Report B,—"On an exploration in the Yukon District, N. W. T. and adjacent northern portion of British Columbia" by George M. Dawson, D.S., F.G.S., for further information regarding geography and history. The writer acknowledges his indebtedness to this Report in determining distances traveled.

The freshet here had overflowed most of the bottom lands and the insects were crowded up into the few dry places left, and therefore easily taken, as I found on making a search among the dead leaves and rubbish among the cottonwood trees. A fine example of *Cychrus angusticollis* Fisch. occurred here, the farthest from the coast that I have ever seen it—perhaps another proof of Dr. Dawson's theory that this cañon marks nearly the head of the old salt water inlet that has been silted up, as this *Cychrus* has always been considered as strictly a coast species. A black variety of *C. marginatus* was also found, with *Elaphrus pallipes*, *Nebria metallica*, *Bembidium quadrifoveolatum* and *Platynus piceolus*. Of *Pterostichus* the most common species was *riparius*, but in comparing with it a few *vitreus* and *luczotii* were taken. Nearly all these were found under sticks and leaves in little hollows, and besides the Carabidæ mentioned I got a few other nice things—an *Anistoma*, probably *lateritia*, two or three *Agathidium revolveus*, *Tachinus nigricornis* in numbers, and rarely an *Ægialia cylindrica* or *rufescens*. On a sand bank a few specimens of *Cicindela Oregona* were flying about and were added to my captures; dead wood and fungi yielded some good things, as, for example, *Colitys scabra*, *Tharops ruficornis* and *Phellopsis obcordata;* while occasionally something nice would be found flying about the camp, as in the case of *Elater Behrensii*, *Corymbites angularis*, *Leptalia macilenta* and *Cephaloon lepturides*, *Creophilus villosus* was attracted by the smell of meat, so was *Silpha lapponica*, the latter species going by the name of "Salmon-bug" up there, and is said to do a great deal of damage to fish put out for curing by the natives.

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# A NEW ARCTIA.

By Annie Trumbull Slosson, New York, N. Y.

**Arctia minea** n. sp.

This moth, from its general form and style of ornamentation, seems closely allied to *arge*. But it is a much larger, more robust insect, and in its coloring quite distinct.

Thorax, abdomen, markings of primaries and entire surface of secondaries, a vivid, a peculiar shade of yellowish red. Background of primaries black, markings broad and distinct; costal and inner margins broadly red. The zigzag lines of outer margin, which, in *figurata*, with its forms of *celia*, *phyllira*, etc., make a *W* or *B*, take in this species the X-like shape so noticeable in *arge* and *dione*. The veins are marked with red, and there is one broad, heavy band of the same vivid color running from base to outer margin, curving in its course, and touching anal angle; secondaries an even tint of yellow-red, with large, black, irregular maculations. Underneath, the costa is marked with fiery orange decoration as on upper side, but in deeper, brighter color. Abdomen with dorsal and lateral rows of black spots.

The characteristic markings of this genus are in some respects so similar in the different species that it is exceedingly difficult to make a description distinctive, and I know I have failed here. But this insect is so striking and peculiar, its fiery tones differ so markedly from the pallid tints of its nearest ally, while its decoration and general habitus are so unlike other groups in the genus that I cannot doubt its right to a specific name.

Described from one male and two females taken at light in Franconia, N. H., in 1889, 1890 and 1892.

* * *

## DESCRIPTION OF A NEW COSSID FROM TEXAS.

By B. Neumoegen, New York.

### **AON** nov. gen.

Head small, eyes large, palpi prominent, prothorax and thorax slender, tufted. Antennæ simply pectinated, slightly tapering off near tip. Primaries, costa straight, apices sharp and pointed; anterior margin well rounded, especially at angle. Inner margin straight. Wings about two and a half times longer than broad. Secondaries, costa straight, margins well rounded, tuft along anal margin. Wings about as broad as long. Body very long and slender, sparsely covered with hair, but with a pronounced anal tuft. Legs slender and pilose; tibiæ free from hair, with minimal claws; venation much the same as in *Hypopta* Hüb.

**Aon noctuiformis** nov. spec.—Antennæ and palpi brown; eyes black. Head and prothorax yellowish brown, encircled by a black line. Thorax gray, with yellow dust along centre. Body gray, with blackish anal tuft. Above: Primaries light gray, strewn with black granules. A prominent black discal and two black basal spots; costa blackish, with small gray dots. A transverse series of small, irregular black blotches from near apex to median space. Light green tints along anterior margin from subcostal to median veins; a blackish hue transversing basal part of intercellular and median areas. Fringes dark gray, with black accentuation at veins; a dark shade along interior margin. Secondaries uniformly grayish white with black marginal tints as far as anal angle; a faint dark gray discal dot. Below: Primaries dark gray with whitish shades from basal area to anterior margin; black tints from base along costa; discal dot not as prominent as above. Secondaries grayish white, powdered with black along costa; prominent black discal dots. Legs covered with light gray hair; tibiæ black, with white spots at joints. Abdomen light gray, with a sparse covering of hair. Expanse of wings 29 mm. Length of body 10 mm.

*Hab.*—Nueces River, S. W. Texas. Types, two males; coll. B. Neumoegen.

Female unknown so far.

A very interesting and rare Cossid, the smallest of our fauna. It comes close to *Hypopta* Hüb., but is a smaller, more slenderly-built insect with primaries as well drawn out as in *Holcocerus* Staud. It resembles, superficially, a noctuid.

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"Mr. Albarda's Collection of Palæarctic Neuroptera.—It was with great regret I heard some time since from my valued friend and correspondent, Mr. H. Albarda, of Leeuwarden, that failing eyesight had caused him to abandon Entomology. His rich and representative collection of Palæarctic Neuroptera was offered by him to the Leyden Museum on condition that it be kept separate and not incorporated in the general collection, and the offer has been eagerly accepted by the authorities. At the same time the Dutch Entomological Society received the donation of such books and pamphlets from his library as the Society did not already possess.—R. McLachlan, Lewisham, London: October, 1892" (Ent. Mo. Mag. November, 1892, p. 290). Mr. Albarda recently published an excellent paper on the family Rhaphididæ, in the "Tijdschrift voor Entomologie," noticed in the Literature Dep't of the News for November.

Strength of the Ant.—As I was recently walking along a rough brick pavement, I noticed a small ant dragging the dead body of a large house-fly across the walk. During the few minutes that I was watching, it pulled the fly two or three feet to the edge of the pavement and then up a bank of rough earth, which had an inclination of at least fifteen degrees, for a distance of six or more inches, when I caught the ant with its burden in an envelope and took them to the laboratory to measure and weigh them. The outside measures of the ant were 1 x 4 millimeters, and its weight was 1.4 milligrams; that of the fly 4.5 x 12 millimeters, and its weight 36.3 milligrams (these weighings were made upon a fine analytical balance). So we note that the ant was dragging up a steep hill a body of over twenty-five times its own weight, and apparently not specially fatigued thereby.—F. P. Dunnington, in "Popular Science News."

# ENTOMOLOGICAL NEWS.

Published monthly (except July and August), by the Entomological Section of the Academy of Natural Sciences, of Philadelphia, with the endorsement of the American Entomological Society. It will contain not less than 240 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., DECEMBER, 1892.

YOUR PHOTOGRAPH WANTED.—The library of the American Entomological Society has two photograph albums which contain the pictures of many noted living entomologists and many long since passed away. The collection was commenced years ago, when the Society was founded, and it is desired that it be continued. It is very interesting to know how some of the older writers looked, and we often picture their countenances in our minds, and when we see their likenesses we often find that our mental pictures were very poor photographs. It is also of interest to know how our contemporaries appear; those with whom we correspond and exchange, and the writers and subscribers to this journal as well as all entomologists at home and abroad. This is all preliminary to asking you to donate your photograph to go in the library of the Society, where it will be preserved for all time. We want the photos of all entomologists irrespective of what they have written or accomplished in the study; all that is necessary is that they be interested in Entomology. Any kind of a photograph will answer, either card or cabinet size, but we prefer the latter. Your picture, if you send it, will be associated with those of such scientists as Linné, Say, Osten Sacken, LeConte, Harris, Walsingham, Walsh, Baird, Poey, Ridings, Gundlach, Kirtland, Robinson, Clemens, Fitch, Loew, F. Smith, Putnam, Westwood, F. Walker, Stainton, Sumichrast, Newman, Agassiz, Haldeman, Provancher and very many others. Address: American Entomological Society, Logan Square, Philadelphia.

NOTICE.—Those who wish to continue their subscriptions to ENTOMOLOGICAL NEWS for the coming year, will please indicate their desire to the Treasurer **before** January 1st next. **No change in price.** We trust that **all** will want to renew, and thus show their appreciation of the gratuitous work of those conducting the publication.

# DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

**Elaphidion Injury.**—One of the striking features noticeable now in riding through the State of New Jersey is the unusual amount of *Elaphidion* injury on oaks. In some localities every tree has several dead or dying twigs, and the ground beneath is strewn with small branches broken off by recent high winds. Some of these twigs contain two, or even three larvæ at short intervals, while there is only one girdling. This seems to indicate that not all the larvæ have the girdling habit. I have bred the species from young oak stems, where no attempt at girdling was ever made: As the species of *Elaphidion* sometimes attack orchard trees, it behooves the agriculturist to collect and burn all fallen oak twigs and branches, during the Winter, where the oaks are near the orchards. All shade and ornamental trees should be so protected at any rate, even when there is no threatened orchard near.

**The "Angoumois Grain Moth,"** of which mention was made last month in comment on Dr. Doran's Bulletin, promises to be more injurious than ever before, during the present season. I have received letters from several parts of New Jersey and Pennsylvania complaining of injury to corn as well as wheat, and most of the letters speak of the large number of "millers" now flying. Wherever this is the case, wheat should be threshed immediately, and either at once disposed of or bulked in tight bins and covered with sacking or some more closely woven substance. Infested corn-cribs are difficult to deal with. If the crib is tight, the carbon disulphide remedy can be used; if it is open work, it is probable that there will be no further breeding of the insects in it this season. The frosty nights will check development, and injury will not increase. As a precaution, cribs containing old corn which is infested, should be cleaned and fumigated with sulphur to destroy lurking moths, before the new corn is stored in it.

**Oviposition of Crickets.**—Among the insects most common on cranberry bogs about picking time, are the crickets, and they are charged by the growers with eating berries, and thus doing considerable injury. The question of just where they oviposit becomes an important one, when we consider the possibility of keeping the insects off the bog, and I sent two of my students, October 13th, to make observations. They were very successful, brought back a quantity of eggs, and the following account is from the report made by Mr. R. S. Lull.

They seemed to prefer dry, sandy ground, and were found in great numbers on the tops of the dams crossing the bogs. But one or two were noticed on peaty ground, and on digging there, could find no trace of eggs so abundant in the sand. Most of the specimens were females, but occasionally a male would be seen, burrowing like the rest, or with his head hidden in the little cavity he had made, he would sing away, possibly to cheer his mate. The females were very busy burrowing, throwing out the sand with considerable force with their strong fore legs; sometimes they dug singly, but often two or three together, preferring some sort of shelter as of a small tuft of grass. Others were busy egg laying, with the long ovipositor thrust deep into the sand, sometimes nowhere near a burrow. Occasionally it seemed as though a burrow had been made, the eggs deposited, and the little cavity filled up again, as in several places where eggs were found, the ground had that loose, freshly-dug appearance.

Carefully scraping away the soil disclosed the eggs, quite near the surface, sometimes only three or four lying together, again a dozen or more. No trace of cell or egg-case was found, although the eggs adhered together more or less. In some of the burrows and on the surface a larva was found, evidently of some predacious beetle, which fed upon the eggs. From the fact that the crickets only oviposit in dry soil, it is suggested that wetting down the bogs, and if possible the dams as well, about the middle of October, might prevent breeding there.

The larva brought in is Carabid, but I have not attempted to fix the genus.

**The Horn Fly Again.**—In the "Industrialist," for October 8th, Prof E. A. Popenoe records the appearance of this insect in Kansas during the present year. The rapidity with which it has spread is simply marvelous. First noticed in 1886, it has in six years overrun almost one-half of our territory, extending north and south from Florida to Quebec, and west to Kansas. The conclusion that the railroad lines have been largely instrumental in spreading the insect would be almost irresistable were it not that the shipment of cattle moves rather from west to east. Unlike *Stomoxys calcitrans* this species does not seem to bother horses.

**The Strawberry Weevil.**—In Bulletin No. xviii, of the Delaware College Experiment Station, Mr. M. H. Beckwith gives us an account of injury done by *Anthonomus musculus* to strawberries in Kent County, Delaware. He has found the larvæ in the injured buds and has bred the beetle June 10th. These beetles mated; but refused to oviposit on potted strawberry plants. They have been found in the field as late as September, and Mr. Beckwith suggests that there are probably two, and possibly three broods during the season, but he is unable to give us any information as to another food-plant, or the method of hibernation. Collectors of Coleoptera have taken this species at almost all times during the season, but I am not aware that any food-plants have been recorded. It is one of those interesting forms that without apparent reason increases surprisingly for one or two years, does a great amount of injury and then drops back into obscurity for a longer or shorter time. Our successors in the next century will undoubtedly look back with wonder at the ignorance and stupidity of the students of the present day who failed to see the (to them) perfectly clear relation between the effect and the cause, but it is as undoubtedly true that no reasonable explanation of the fact has been advanced. Mr. Beckwith has made no experiments, but recommends kerosene emulsion and hellebore, expressly discountenancing the use of the arsenites on the score of danger to the consumer. This makes possible an interesting comparison with Bulletin 18 of the Iowa Station noted in our last number, in which a free use of the arsenites even upon well grown fruit is advocated. Personally, I fail to see any danger in their application while in bud or in blossom, and it is at this time that the applications against the "weevil" must be made. I very much doubt the efficiency of the hellebore mixture. One ounce to three gallons of water may do for currant worms, or the saw-fly larvæ generally, but it will not be found effective for much besides. The snout beetles are usually difficult to kill at best, and where the feeding is done by puncturing the bud and eating the undeveloped petals anything short of the arsenites is practically useless, and I would not expect too much of even these. The kerosene suggestion is, in my opinion, the one most likely to be useful.

# Notes and News.

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

**To Contributors.**—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

THE newspaper clipping referring to donation of the Angus collection to American Museum of Natural History of New York, which appeared on page 97, vol. iii, of ENT. NEWS, was not written by me, as I furnished only the last sentence concerning Catocalæ.—Dr. R. E. KUNZE.

LIEUT. R. E. PEARY, the Arctic explorer, saw bumble-bees at north latitude 81° 37′ in Greenland, and stated that blue-bottle flies were as common that far north as they are in Philadelphia around a butcher-shop. The latitude mentioned is within about 580 miles of the North Pole.

NOTE ON TACHYTES.—In connection with the recent monograph of the North American species of *Tachytes* by Mr. Fox, in Transactions Entomological Society xix, I want to say that I have confirmed Mr. Cresson's suspicion that *T. elongatus* Cr. might be the male of *T. distinctus* Sm. by taking them in copula. In Illinois I have also taken *T. validus* (common), *T. aurulentus*, *T. sericatus* and *T. obscurus*.—CHAS. ROBERTSON, Carlinville, Ill.

VENTURESOME INSECTS.—Mr. Webster's note in the NEWS for November, p. 232, on the behavior of *Pyrameis atalanta*, recalls the fact that I made the same observation at Wallingford, Delaware County, Pa., in 1881 and 1882. Late in sunny Summer afternoons, about 5.30 o'clock, or even later, one or sometimes more individuals of *P. atalanta* appeared day after day, at nearly the same spot in an orchard lawn. Sometimes they alighted upon persons, more often upon the trees or the ground. I have noticed the same phenomena in this species in later years, but cannot now specify the times and places. Among dragonflies, the only similar occurrence that I can now recall, is that of some males of *Plathemis trimaculata* repeatedly alighting upon my gray flannel shirt, late one afternoon, while I was watching them in a clearing in the woods at Folsom, Pa. The bluish white color of their abdomens at first suggested that their alighting upon my shirt was an instance of protective resemblance, but I doubt that such was the case.--PHILIP P. CALVERT.

TO DR. ROBERT H. LAMBORN, the public is indebted for an effort made a few years since toward discovering a method for exterminating mosquitoes. Although many months of research and experiment resulted in no apparent abatement of the nuisance, still it is not improbable that the future may bring to the notice of entomologists some predatory insect which may be utilized as a mosquito annihilator. The higher development of useful domestic insects has long been the study of agriculturists, and has been as important a factor in economics as the limitless effort to resist the noxious parasite.

Among the many insects indispensable to man are the cochineal bug, the silk worm and the honey bee; to the latter Dr. Lamborn's attention has recently turned, doubtless with a view to bringing about the advent of the much-talked-of "Coming Bee."

Although apiculture is the oldest economic pursuit, it is only within the last century that much scientific thought has been directed to the perfection of the stock. Much has been accomplished in the line of developing a gentler bee, but at the expense of other qualities. To evolve an ideal bee some points must be considered which have hitherto been overlooked. A combination of desirable points of various races and an elimination of objections must require much patience, time and money.

CARRIE B. AARON.

A CHANGE IN THE NAME OF A RECENTLY-DESCRIBED SPECIES OF ORCHELIMUM.—Recently, while examining a small collection of New Jersey Orthoptera which had been sent to me by Prof. John B. Smith, of the New Jersey Agricultural Experiment Station, for determination, a pair of small *Orchelimum* were encountered which agree in every respect with Harris' description and figure of *Orchelimum gracilis* as given in "Insects Injurious to Vegetation," edition of 1863, p. 163, fig. 78. By referring to "Materials for a Monograph of the Orthoptera of N. America" by Samuel H. Scudder, it will be seen that on page 451 this insect of Harris' is made a synonym of De Geer's *Locusta fasciata*, which is the

*Xiphidium fasciatum* of Serville and later writers. It is quite possible that Mr. Scudder did not have typical specimens of the insect in question at hand when he was working over the material upon which he based his decision of the synonymy of names. At any rate the two insects are quite distinct, as the specimens before me very plainly indicate, and therefore Harris' name should be restored to the insect which originally bore it.

In this connection it might be well for me to go a little further and correct an error which I fell into by accepting this synonymy as made out by the author referred to above. In an article published in the "Canadian Entomologist" for April, 1891, on page 70, I described as new a species of *Orchelimum* from Nebraska, for which I chose the name *gracile*. Now, that this name has been ascertained to rightfully belong to another species of the genus, my insect's name will necessarily have to be changed. I therefore suggest for it the name *delicatum*, suggestive of its general delicate structure and appearance.

In my article above referred to I have also unintentionally allowed the name *lanceolatum* to appear where that of *attenuatum* should have been used instead. This error occurred on account of my having described one of Mr. Scudder's species as new under this name, but afterwards found out my error in time to make the correction in the paper where the description occurs before it was printed, but did not do so in the notes which follow.—Lawrence Bruner, Nebraska State University.

## Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

## Entomological Literature.

Bulletin of the American Museum of Natural History, iv, pp. 167, *et seq.*, New York, 1892.—List of types of Lepidoptera in the [Henry] Edwards Collection of Insects [now in this Museum,] W. Beutenmüller.

Bulletino della Societa Entomologica Italiana, xxiv, 2, Florence. Sept. 15, 1892.—Contributions to the dipterological fauna of the province of Pavia, II, M. Bezzi. Contributions to the study of the Brenthidæ,*† xii, A. Senna. On grasshoppers in the low Florentine plain, *Aonidia Blanchardi* n. sp. of Coccidæ from the date palm of the Sahara, A. Targioni Tozzetti, figs.

The Entomologist's Record, London, Oct. 15, 1892.—The genus *Acronycta* and its allies (cont.), Dr. T. A. Chapman. A melanic race of *Liparis monacha*, J. A. Clark, 1 pl. Variation in size brought about by food, E. A. Bowles.

The Journal of Comparative Neurology, II, pp. 89–136, Granville, Ohio, September, 1892.—Psychological notes upon the Gallery Spider—Illustrations of intelligent variations in the construction of the web, C. H. Turner.

Ofversigt af Finska Vetenskaps-Societetens Forhandlingar, xxxiii, Helsingfors, 1891. [On Siberian Hemiptera-Heteroptera],* O. M. Reuter; has some comparisons of N. American and other faunas.

Le Naturaliste, Paris, Oct. 15, 1892.—The mouth and the buccal organs of Arthropods (concl.), R. Saint-Loup. The useful insects of China, Tcheng-Ki-Tong.

Jahres-Bericht der Naturforschenden Gesellschaft Graubuensdens, n. f. xxxv, Chur, 1892. On the formation of honey, Dr. A. v. Planta.

Deutsche Entomologische Zeitschrift, 1892, 1, Berlin, August, 1892.—On the law of moderation in the alteration of the markings of insects: Contribution to the theory of development from constitutional causes, K. Escherich, 1 pl. The Anchonid group,*† J. Faust. [On Coleoptara from Turkestan, Siberia, Persia and the Amur River]*† Dr. L. v. Heyden and J. Weise. [On Cicindelidæ]*† W. Horn. The varieties of *Dorcadion equestre* Laxman, Dr. G. Kratze, 1 pl. Monographic revision of the Rutelid genus *Popillia* Serv., id. VII. Contribution to the German beetle fauna, J. Schilsky. Revision of the palæarctic species of the Elaterid genus *Melanotus* Eschsch., O. Schwarz, 1 pl.

Annales des Sciences Naturelles. Zoologie, xiii, 6, Paris, Oct. 5, 1892.—Anatomical and physiological researches on the compound eye of Arthropods, H. Viallanes, 2 pls.

Zeitschrift fur Wissenschaftliche Zoologie, liv, 4, Leipsic, Oct. 18, 1892.—Contributions to the knowledge of the wings of insects, C. Hoffbauer, 2 pls., figs.

The Ottawa Naturalist, November, 1892.—*Calosoma scrutator* at Ottawa, J. Fletcher.

Animal Coloration.—An account of the Principal Facts and Theories relating to the Colours and Markings of Animals, by Frank E. Beddard, M.A., etc. With four coloured plates; and woodcuts in the text. London: Swan Sonnenschein & Co. New York: Macmillan & Co., 1892, pp. viii, 288. "I have not used insects so much as has Mr. Poulton. . . . Nevertheless, it is impossible not to devote a great deal of space to insects.

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* Contains new species other than North American. † Contains new genera.

The theory of mimicry, for instance, is almost entirely supported by evidence furnished from that group." Preface, p. iv.

The Entomologist's Monthly Magazine, London, November, 1892. —Notes on some British and exotic Coccidæ, J. W. Douglas; figs. etc.

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Verhandlungen der k. k. Zool.-Bot. Gesellschaft in Wien, xlii, 1, April, 1892. On the so-called stand-still stage in the development of Oestrid larvæ, Dr. F. Brauer. Communications on Gall-flies,* E. H. Ruebsaamen, 2 pls. 13 figs.—2, August, 1892. The biological significance of the genital appendages of insects, C. Escherich, 1 pl. Monographic revision of the Mecopodidæ, J. Redtenbacher, 1 pl.

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* Contains new species other than North American. † Contains new genera.

THE BRITISH NATURALIST, London, November, 1892.—The secondary sexual characters of the British Coleoptera, J. W. Ellis. Portrait and sketch of Rev. O. P. Cambridge.

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## NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

### COLEOPTERA.

Anchonidæ: n. sp. from Mexico and Central America; Faust, Deut. Ent. Zeit. 1892, pp. 17-60.

*Omus Hornianus*, W. Horn, Deut. Ent. Zeit. 1892, p. 91, Calif.?

*Argodia* n. gen. Lamiidæ, Belon, Bull. Ent. Soc. France, 1892, p. liv. *A. Grouvellei* id., Mex.

### ARACHNIDA.

*Cyrtauchenius talpa* Simon, Ann. Soc. Ent. France, 1891, p. 303, Calif. *Brachythele longitarsis* p. 305, S. Calif. *B. Theveneti*, p. 305, Calif.

### DIPTERA.

New species of *Chrysops*, *Corisoneura*, *Diatomineura*, *Diachlorus*, *Stibasoma*, *Therioplectes*, *Atylotus*, *Tabanus*, Bigot, Mem. Soc. Zool. France, v., pp. 603-688.

ENTOMOLOGICAL NEWS for November was mailed October 28, 1892.

VOL. I. No. 10.

# Entomological News

AND

# PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

DECEMBER, 1890.

EDITOR:
HENRY SKINNER, M. D.

ADVISORY COMMITTEE:
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# Entomological News

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Coleoptera and Lepidoptera and Chrysalids from New York and N. Mexico, collected 1889, in exchange for Coleoptera, Lepidoptera and chrysalids of N. America.—H. Meeske, 1542 Gates Ave., Brooklyn, N. Y.

I desire to buy Macro-Lepidoptera from the North and West of the U. S., from S. America, Africa and Australia, at liberal rates.—B. Neumoegen, P. O. Box 2581, New York City.

Coleoptera of New York in exchange for any North American species not in my collection. Correspondents in the South and West especially desired.—John D. Sherman, Jr., 953 Paulding Street, Peekskill, N. Y.

Wanted.—Entomological books, periodicals, papers, reports and clippings. Will exchange for them original drawings or paintings of insects. —Alda M. Sharp, Gladbrook, Iowa.

Wanted.—Macrolepidoptera of North America. Will exchange or purchase.—C. S. McKnight, Saratoga Springs, N. Y.

Lepidoptera of Montana exchanged for other desirable epecies.—Chas. A. Wiley, Miles City, Mont.

Coleoptera.—I wish to exchange *G. speciosus* and *S. calcarata* for other perfect specimens of Cerambycidæ. Send list of duplicates to Christ. Hauschildt, care of Cosack & Co., Buffalo, N. Y,

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Wanted for cash or exchange, determined or undetermined, Melandryidæ and Oedemeridæ.—Joe. C. Thompson, Box 73, Rosebank P. O., S. I., N. Y.

Wanted.—Six pairs of *Argynnis Diana*, fine; also Exotic Butterflies. *Exchange:* Java Butterflies, *Ornithoptera Urvilliana*, one pair, second quality; Darjeeling Butterflies, *Ornithop. Crœsus* expected shortly, and others from Baljan. Duplicate list of exotic species wanted.—W. Dannatt, Westcombe Park, London, S. E. England.

Wanted.—Entomological books, periodicals, etc., in exchange for Japanese insects.—H. Loomis, Yokohama, Japan.

Coleoptera in exchange for specimens not in my collection; also for entomological books, papers, etc. Correspondents desired in the South and West.—Lee B. Walton, Jr., Bear Lake, Warren County, Pa.

I have a number of Patent Office and Agricultural Reports, containing valuable plates and descriptions of insects which I will exchange for conchological works.—W. W. Westgate, 200 Washington St., Houston, Tex.

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VOL. II. No. 10.

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**Lepidoptera.**—Have a lot of fine *Cecropia* cocoons which I wish to exchange for cocoons or pupæ of almost any other variety of Lepidoptera.—James Tough, 236 S. Water St., Chicago, Ill.

**Lepidoptera.**—I desire to exchange cocoons of *Samia cynthia*, *Telea polyphemus* and *Attacus cecropia* for other N. Am. cocoons or bird's eggs.—T. W. Glover, Whitman, Mass.

**Lepidoptera.**—Cocoons of *Attacus columbia* Smith to exchange for native lepidoptera, or for books on North American lepidoptera.—Robert H. Wolcott, Phi Delta Theta House, Ann Arbor, Mich.

**Lepidoptera.**—I am studying the Noctuid genera *Euclidia*, *Drasteria* and *Litosea*. Specimens bought, exchanged or determined.—M. V. Slingerland, Cornell Insectary, Ithaca, N. Y.

**Lepidoptera.**—Wanted to purchase cocoons and larvæ from different parts of U. S. State name and price.—E. J. Kuegeman, 54 May St., Lake View, Chicago, Ill.

**Lepidoptera.**—Wanted to exchange, papers on N. Am. Lepidoptera for Noctuidæ or Heterocera generally. Noctuidæ named for privilege of retaining desiderata.—John B. Smith, New Brunswick, N. J.

**Hymenoptera,** especially Bees of U. S. and Canada, wanted. Tropical collections to name.—Wm. Hampton Patton, Hartford, Conn.

**Coleoptera** of N. Am. and Mexico wanted by purchase or exchange; large collection.—Fred. C. Bowditch, Tappan St., Brookline, Mass.

**Lepidoptera.**—To exchange *Cat. amatrix*, *C. parta* and *Hemaris thysbe* in papers, for southwestern species or Arctians and Zygænids set or papered.—Dr. R. E. Kunzé, 606 Third Ave., New York City.

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**Phryganidæ** wanted; will exchange choice Coleoptera and Lepidoptera from Kansas, Colorado and New Mexico (Prof. F. H. Snow's collecting) for Caddice-flies, U. S. or exotic.—Vernon L. Kellogg, Univ. of Kansas Lawrence, Kansas.

**Coleoptera.**—Coleoptera to exchange for Coleoptera, Hymenoptera, Odonata, aquatic Hemiptera and entomological literature. Cicindelidæ, Cerambycidæ, Meloidæ, especially desired.—W. E. Snyder, Beaver Dam, Wis.

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**Coleoptera.**—For exchange: Scarabæidæ, Dytiscidæ, Gyrinidæ and Hydrophilidæ, especially desired.—Ralph Hopping, Redstone Park, Kaweah, Cal.

(Continued on third page of cover.)

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**Lepidoptera** (diurnal) of Iowa to exchange for species of same order not in my collection.—Henry G. Willard, Grinnell, Iowa.

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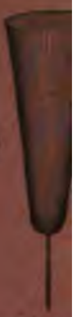

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